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Volume 2 Number 5 Pages 291-378 September 4, 1959

BIBLIOGRAPHY

SOVIET SCIENCE AND TECHNOLOGY, 1959, VOL. 3, NO. 1. A monthly guide to Soviet research. Mar 59, 86p.
Order from CB $25.00/year

English table of contents of 1958-1959 issues of all Soviet journals being translated into English on a continuing basis.

TRANSLATIONS SERVICE ACCESSIONS, 3 Apr 59. [32]p. TG 230-T99.
Order from OTS $1.00 59-21006

Contents:
Translation notes of interest
Foreign-language scientific publications received by APL/JHU library
Foreign-language scientific publications ordered by APL/JHU library
Translated tables of contents
- Academy of sciences, USSR. Proceedings (Akademiia nauk SSSR. Doklady)
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- Journal of analytical chemistry (Zhurnal analiticheskoi khimii)
- Journal of physical chemistry (Zhurnal fizicheskoi khimii)
- Journal of scientific and applied photography and cinematography (Zhurnal nauchnoi prikladnoi fotografii i kinematografii)
- Journal of inorganic chemistry (Zhurnal neorganicheskoi khimii)
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- Mathematics symposium. New series (Matematicheskii sbornik. Novaia seriia)
- Theory of probability and its applications (Teoriia veroiatnostei i ee primeneniia)
- Academy of sciences of Hungary. Proceedings. Physics section (Academia scientiarum Hungaricae acta physica)
- Academy of sciences, USSR. Proceedings (Akademiia nauk SSSR. Doklady)
- Atomic energy (Atomnaia energiia)
- Optics and spectroscopy (Optika i spektroskopiia)
- Journal of physical chemistry (Zhurnal fizicheskoi khimii)

Library of Congress, Washington, D. C.
EAST EUROPEAN ACCESSIONS INDEX. July 59, 275p.
Order from GPO $10.00/year

Designed to serve the English-speaking user, this index lists post World War II publications received by the Library of Congress and over 100 major American research libraries from Albania, Bulgaria, Czechoslovakia, Estonia, Hungry, Latvia, Lithuania, Poland, Rumania, and Yugoslavia in all fields of knowledge. Arrangement in the first part is by country and within each country by 17 subject classes. In addition to the entry in the original language, a translation of the title or a descriptive annotation in English is given for each monograph and periodical, with the tables of contents translated into English for selected periodicals. The second part, comprising approximately two-thirds of the Index, consists of a subject index to all articles appearing in periodicals for which the tables of contents are translated and to all monographs listed.

AGRICULTURE

GIDROTEKHNIKA I MELIORATSIYA (USSR) 1959 (Hydraulic Engineering and Soil Improvement). [1959]
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 2, p. 3-64, PB 141 092T-11
No. 3, p. 3-64, PB 141 092T-10

Consists of abstracts in English.

Animal Husbandry

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR)
1958, 1959 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Contents:
Section Q. Farm Animals.

1958, no. 10, Abstracts 45130-45352, JPRS: 1414-N, 59-13361
1958, no. 22, Abstracts 101138-101290, JPRS: 1764-N, 59-13716
1959, no. 1, Abstracts 2606-2773, JPRS: 1774-N, 59-13722

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR)
1958, 1959 (Soviet Abstracts. Biology)
Order from OTS $1.00 each

Contents:
Section R. Diseases of Farm Animals.

1958, no. 16, Abstracts 74175-74250, JPRS: 1751-N, 59-13700
1959, no. 1, Abstracts 2775-2858, JPRS: 1729-N, 59-13669

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Alekperov, Yu. G. and Manafov, I. I.
METHOD FOR THE CONTROL OF FOOT-AND-MOUTH DISEASE IN YOUNG AGRICULTURAL ANIMALS (Opyt Bor'by s Yashchurom Molodnyaka Sel'skokhozyaystvennykh Zhivotnykh). [1959] 2p. Trans. V1419.
Order from LC or SLA mi$1.80, ph$1.80 59-16203

Trans. of Veterinariya (USSR) 1959, v. 36, no. 2, p. 41.

Young calves, piglets and lambs were protected during an outbreak of foot-and-mouth disease by the injection of citrated blood of convalescents. Losses dropped from a high of 76% to 0.3%.

Bel'kov, N. F. and Kondyurin, N. G.
OMSK VETERINARY INSTITUTE FORTY YEARS OLD (40 Let Omskomu Veterinarnomu Institutu). 15 Apr 59, 14p. (19 illus. omitted) Trans. V1415.
Order from LC orSLA mi$2.40, ph$3.30 59-16151

Trans. of Veterinariya (USSR) 1959, v. 36, no. 2, p. 28-34.

Borodulin, N. A., Bystrov, T. A., and Andryanov, V. P.
DIAGNOSIS, PROPHYLAXIS AND ERADICATION OF HOG CHOLERA IN SWINE (Diagnostika, Profilaktika i Likvidatsiya Zabolevaniya Sviney Chumoy), annotated by I. A. Rostovtseva. 4 May 59, 19p. (1 illus. omitted) Trans. V1422.
Order from LC or SLA mi$2.40, ph$3.30 59-16207

Trans. of Veterinariya (USSR) 1959, v. 36, no. 2, p. 57-62.

This is a composite article, consisting of 10 communications from veterinary surgeons in various parts of the USSR, reporting practical experience with hog cholera, with emphasis on the use of virus vaccine.

Ipatenko, N. G.
APPLYING INTRADERMAL VACCINATION FOR THE IMMUNIZATION OF SWINE AGAINST HOG CHOLERA (Immunizatsiya Sviney Protiv Chumy Vnutrikozhnoy Vaktsinatsiyey). 20 Apr 59, 5p. Trans. V1414.
Order from LC or SLA mi$1.80, ph$1.80 59-16204

Trans. of Veterinariya (USSR) 1959, v. 36, no. 2, p. 55-56.

Experience in dealing with hog cholera outbreaks since 1956 indicates that intradermal crystal violet vaccination is effective if applied at the very beginning of the outbreak.

Kolesov, S. G. and Mikhaylov, N. A.
STUDIES OF THE IMMUNOGENIC PROPERTIES OF THE ALUMINUM HYDROXIDE VACCINE AGAINST ANTHRAX AND TESTING IT AT-LARGE IN THE PRACTICE (Izucheniye Immunogennykh Svoistv Gidrookis'-alyuminiyevoy Vaktsiny Protiv Sibirskoy Yazvy i Ispytaniye Yeye v Shiroloi Praktike). [1959] 10p. Trans. V1398.
Order from LC or SLA mi$1.80, ph$1.80 59-14670

Trans. of Gosudarstvennyy Nauchno-kontrol'nyy Institut Veterinarnykh Preparatov. Trudy (USSR) 1956, v. 6, p. 250-255.

The results of tests on 655,659 animals indicate that the aluminum hydroxide vaccine is harmless and that it evokes an immunity to anthrax in sheep which lasts not less than one year.

Koropov, V. M. and Polukhin, F. S.
FOR THE DEVELOPMENT AND CONSOLIDATION OF VETERINARY EDUCATION BY CORRESPONDENCE (Razyivat' i Ukreplyat' Zaochnoye Veterinarnoye Obrazovaniye). 22 Apr 59, 6p. Trans. V1412.
Order from LC or SLA mi$1.80, ph$1.80 59-16205

Trans. of Veterinariya (USSR) 1959, v. 36, no. 2, p. 11-13.

Recommendations for the improvement of correspondence instruction include an extension of the required time for supplementary formal study at the parent institution, a reduction of the number of correspondent

students assigned to one instructor from 60 to 30, and an increase in the number of trips by the instructor to the student's place of work.

Likhachev, N. V.
DETERMINATION OF THE ACTIVE PROPERTIES OF AN ANTIANTHRAX SERUM USED ON WHITE MICE (Opredeleniye Aktivnykh Svoistv Protivosibireyazvennoy Syvorotki na Belykh Myshakh) [1959] 4p. Trans. V1407.
Order from LC or SLA mi$1.80, ph$1.80 59-14677

Trans. of Gosudarstvennyy Nauchno-kontrol'nyy Institut Veterinarnykh Preparatov. Trudy (USSR) 1956, v. 6, p. 262-264.

Okuntsov, I. V. and Epifanov, G. F.
LAPINIZED VACCINE AGAINST HOG CHOLERA IN EXPERIMENTS AND IN PRODUCTIONAL TESTS (Lapinizirovannaya Vaktsina Protiv Chumy Sviney v Eksperimente i v Proizvodstvennom Opyte). 14 Apr 59, 7p. Trans. V1413.
Order from LC or SLA mi$1.80, ph$1.80 59-16150

Trans. of Veterinariya (USSR) 1959, v. 36, no. 2, p. 48-51.

Pogonyaylo, G. F.
DRY LAPINIZED VIRUS VACCINE AGAINST HOG CHOLERA (Sukhaya Lapinizirovannaya Virus-Vaktsina Chumy Sviney). 2 Apr 59, 11p. Trans. V1411.
Order from LC or SLA mi$2.40, ph$3.30 59-14679

Trans. of Veterinariya (USSR) 1959, v. 36, no. 2, p. 51-55.

Plant Cultivation

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Contents:
Section N. Weeds and Weed Control.

No. 9, Abstracts 39586-39633, JPRS: 1772-N, 59-13720
No. 10, Abstracts 44413-44440, JPRS: 1750-N, 59-13699

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 10 (Soviet Abstracts. Biology). 9 July 59, 4p. JPRS: 1766-N.
Order from OTS $1.00 59-13718

Contents:
Section L. Meadow Cultivation: Abstracts 43981-43983.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 15 (Soviet Abstracts. Biology). 29 June 59, 218p. JPRS: 1754-N.
Order from OTS $1.00 59-13703

Contents:
Section M. Cultivated Plants. Abstracts 68052-68443.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 16. (Soviet Abstracts. Biology). 26 June 59, 19p. JPRS: 1657-N.
Order from OTS $1.00 59-13585

Contents:
Section I. Plant Physiology. Abstracts 72530-72622.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 16. (Soviet Abstracts. Biology). 24 June 59, 43p. JPRS: 1658-N.
Order from OTS $1.00 59-13586

Contents:
Section J. Soil Science. Abstracts 72623-72759.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGY (USSR) 1958, NO. 16. (Soviet Abstracts. Biology). 30 June 59, 11p. JPRS: 1747-N.
Order from OTS $1.00 59-13696

Contents:
Section O. Plant Diseases, Abstracts 73272-73346.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 19. (Soviet Abstracts. Biology). 22 June 59, 34p. JPRS: 1713-N.
Order from OTS $1.00 59-13652

Contents:
Section K. Forestry. Abstracts 86829-86907.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 21 (Soviet Abstracts. Biology). 30 June 59, 20p. JPRS: 1752-N.
Order from OTS $1.00 59-13701

Contents:
Section I. Plant Physiology. Abstracts 95596-95666.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Anufriyeva, E. V., Vol'kenshteyn, M. V., and Koton, M. M.
OPTICAL PROPERTIES AND CHEMICAL STRUCTURE OF ANTHRACENE-POLYSTYRENE PLASTICS, tr. by Lydia Venters. Feb 59, [12]p. (6 figs. omitted) 6 refs.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3572

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1957, v. 31, no. 7, p. 1532-1541.

Measurements of the absorption and a fluorescence spectra and also the durations of the luminescence, τ, of the system anthracene (its derivatives)-polystyrene indicated that, in the polymerization of styrene containing dissolved anthracene, part of the molecules of the latter adds to the ends of the polymer chains, substituting the 9-hydrogen atom for the chain radical without rupture of the double bonds in the molecule. This leads to considerable change in the optical properties of the anthracene, its spectrum shifting towards the long wave region, and to increased duration of luminescence from 5.6×10^{-9} for the free anthracene to 14×10^{-9} sec. for the anthracene bound to the polymer. On substituting in the 9, 10 positions of anthracene the character of the interaction of the luminophor with styrene changes: 9, 10-diphenyl, and 9, 10-dichloroanthracene evidently do not interact with styrene since their optical properties do not change during the process. Part of the molecules of 9-chloro- and 9-methylanthracene adds to the chain polymer during polymerization of styrene, the hydrogen atom in the 10 position being substituted. The interaction of anthracene and of its 9-substituents with styrene during the polymerization process explains the retardation effect of these luminophors on the process and the smaller molecular weights of the polymers formed.

Maurer, K., Hofmann, G., and Boumgartner, A.
INVESTIGATION OF THE HEAT AND WATER ECONOMY OF THE STANDS OF YOUNG SPRUCE. 1. THE EXPERIMENTAL STAND OF TREES. 2. A RADIATION BALANCE METER FOR FORESTRY METEROLOGICAL INVESTIGATIONS. 3. THE RADIATION BALANCE IN A YOUNG SPRUCE STAND (Untersuchungen zum Wärme- und Wasserhaushalt Junger Fichtenbestände. 1. Der Versuchsbestand. 2. Ein Strahlungsbilanzmesser fur Forstmeteorologische Untersuchungen. 3. Die Strahlungsbilanz in einer Fichtendickung) tr. by C. M. Rintoul, with introduction by Rudolf Geiger. [1959] [40]p. 20 refs.
Order from SLA mi$3.00, ph$6.30 59-10921

Trans. of Forstwissenschaftliches Zentralblatt (Germany) 1952, v. 71, no. 11/12, p. 322-349.

ASTRONOMY

Astrophysics

Chkhaydze, Sh. M. and Georgobiany, N. I.
SPECTROHELIOSCOPIC OBSERVATIONS CARRIED OUT ON THE KANOBILI MOUNTAIN DURING 1941-1944 (Spektrogelioskopicheskiye Nablyudeniya na Gore Kanobili v 1941-1944 Gody) [1959] 4p. F-TS-9784/III.
Order from LC or SLA mi$1.80, ph$1.80 59-16048

Trans. of Astrofizicheskaya Observatoriya, Abastumani. Byulleten' (USSR) 1953, no. 15, p. 169-260.

Data are presented on the daily spectrohelioscopic observations of the surface of the Sun in the Halpha-line, which are being carried out on top of the Kanobili mountain. The observations cover the period from January 1941 through December 1944. The description of the observations and the instrument can be found in the Bulletin of the Abastumansk Observatory No. 3, p. 31, 1938.

Chkhaidze, Sh. M.
SPECTROHELIOSCOPIC OBSERVATIONS ON KANOBILI MT. FROM 1945-1947 (Spektrogelioskopicheskiye Nablyudeniya na Gore Kanobili v 1945-1947 Gody). [1959] 2p. F-TS-9783/III.
Order from LC or SLA mi$1.80, ph$1.80 59-16049

Trans. of Astrofizicheskaya Observatoriya, Abustumani. Byulleten' (USSR) 1954 [v. 17] p. 149-272.

Data are presented below concerning the diurnal spectrohelioscopic observations of the Sun's surface along a line H α, conducted on Kanobili Mt. The observations take in the period from January, 1945 to December, 1947. A description of the observations and of the instrumentation used may be found in the "Bulletin of the Abastuman Observatory", No. 3, p. 31, 1938. The symbols used are explained both there and in Bulletin No. 15, 1953. Number of days during which observations were conducted: 1945 = 179; 1946 = 149; 1947 = 145. On the following dates, the mirrors of the coelostat (heliostat) were silverplated: 1945—12 May, 13 Septemter; 1946—30 March, 17 December; 1947—24 July, 14 November. Observations were conducted by Sh. M. Chkhaidze (Ч), T. S. Razmadze (Р), D. A. Khitarishvili (Х), T. A. Kochlashvili (К), A. F. Torondzhadze (Т) and N. I. Georgobiani (Гр.).

(Translator's Note: parenthesized letters are keys to column 16 in tables). March, 1948. (The explanation of the symbols in the tables is written directly in the original text. The letters "C" and "B" in column 6 throughout columnar data stand for "light floccules" and "fibers" respectively) - Translator. (The translation is given above in its entirety.)

Gnevyshev, M. N. and Gnevysheva, R. S.
SOME RESULTS OF OBSERVATION OF THE SOLAR CORONA BETWEEN ECLIPSES (Nekotoryye Resul'taty Vnezatmennykh Nablyudeniy Solnechnoy Korony). [1959] [5]p. 4 refs. F-TS-9631/V.
Order from LC or SLA mi$1.80, ph$1.80 59-16060

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 101, no. 6, p. 1017-1018.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as 59-10122, 16 Apr 56, 2p.

Results of 2 years of observation of the green coronal line 5302.8 A and of the red line 6374.5 A are reported. A previously unobserved helium line D3 5875.6 A is described.

BEHAVIORAL SCIENCES

PROFESSIONAL'NO-TEKHNICHESKOYE OBRAZOVANIYE (USSR) 1959, NO. 2, P. 1-32 (Vocational and Technical Education). [1959] 1v. SOV-27-59-2-(1-30)/30.
Order from OTS $0.50, $6.00/year PB 141 022T-10

Consists of abstracts in English.

Firsov, L. A.
CONDITIONED INHIBITION IN PRIMATES. 25 Feb 59, 9p. (4 figs. omitted) 17 refs. JPRS: L-646-N.
Order from OTS $0.50 59-13205

Trans. of [Akademiya Nauk]. Institut Fiziologii. Trudy, 1957, v. 6, p. 470-476.

BIOLOGICAL SCIENCES

Tuffier, Theodore.
SURGERY OF THE LUNG, PARTICULARLY IN TUBERCULOUS CAVITIES AND PULMONARY GANGRENE. (Chirurgie du Poumon, en Particulier dans les Cavernes Tuberculeuses et la Gangrène Pulmonaire). [1959] 5p. 13 refs.
Order from SLA mi$1.80, ph$1.80 59-15537

Trans. of Congres International de Médecine (no. 12) Comptes Rendus, 1897, p. 21-24.

Anatomy and Physiology

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology)
Order from OTS $1.00 each

Contents:
Section S. Human and Animal Morphology.

No. 12, Abstracts 54981-55165, JPRS: 1508-N, 59-13460
No. 22, Abstracts 101401-101555, JPRS: 1699-N, 59-13631

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 21. (Soviet Abstracts. Biology). 30 June 59, 119p. JPRS: 1749-N.
Order from OTS $1.00 59-13698

Contents:
Section T. Human and Animal Physiology. Abstracts 97186-98056.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Beritov, I. S. and Roytbak, A. I.
THE NATURE OF THE PROCESS OF CENTRAL INHIBITION. 3 June 59, 17p. (6 figs. omitted) 18 refs. JPRS: L-1219-D.
Order from OTS $0.50 59-11361

Trans. of Zhurnal Vysshey Nervnoy Deyatel'nosti (USSR) 1955, v. 5, no. 2, p. 173-186.

Leytes, S. M.
LIPOCAINE: THE SECOND HORMONE OF THE PANCREAS. [1959] [13]p. 12 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15742

Trans. of Problemy Endokrinol[ogii] i Gormonoterap[ii] (USSR) 1955, v. 1, no. 1, p. 71-77.

Rutishauser, W.
THE DEPENDENCE OF THE ARTERIOVENOUS OXYGEN DIFFERENCE AND THE OXYGEN CONSUMPTION OF THE RABBIT'S REAR EXTREMITY ON THE PERFUSION VALUE AND THE EFFECT OF VASOCONSTRICTING DRUGS. [1959] 31p. 30 refs.
Order from SLA mi$3.00, ph$6.30 59-15472

Trans. of dissertation, Basle U. Die Abhängigkeit der Arterioyenösen Sauerstoffdifferenz und des Sauerstoffverbrauchs der Hinterextremität des Kaninchen von der Durchströmungsgrösse und der Wirkung Gefässverengender Pharmaka, Basle.

A method is described whereby the intact resting rear leg of the rabbit can be perfused with a constant changeable volume of blood per unit of time. With this method the problem of the connection between blood flow and O_2 consumption is examined. If the flow is varied, the O_2 consumption remains constant as long as the volume of flow is no less than 4 or 5 ml blood/min/100 g tissue. O_2 consumption decreases if the flow falls below this level. The arteriovenous O_2 difference and the O_2 consumption with optimal constant flow were determined under epinephrine and Privine. Under these conditions the arteriovenous difference and also the O_2 consumption decreases. This effect can be caused only by a locally changed kind of circulation or by a qualitative change in the metabolism of the whole perfused vascular area. The fundamental cause of the effect of vasoconstricting drugs on the metabolism must be based on one of these factors.

Biochemistry

Andreyeva, T. F. and Nal'bornik, E. Ya.
THE EFFECT OF THE PHYSIOLOGICAL CONDITION OF A PLANT AND OF CERTAIN EXTERNAL EFFECTS ON THE COMPOSITION OF THE PRODUCTS OF PHOTOSYNTHESIS, tr. by Richard B. Mudge. 24 Feb 57, 12p. 14 refs. UCRL Trans. 374.
Order from LC or SLA mi$2.40, ph$3.30 59-10392

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 114, no. 3, p. 662-665.

The participation of carbon assimilated during the formation of amino acids, albumins, and carbohydrates in the photosynthesis process was observed in two series of experiments. In one series, kidney beans and tobacco were grown in vegetation vessels on a Hellriegel mixture with 1/2 the nitrogen norm. On the day before the experiment, a 1% solution of $(N^{15}H_4)_2SO_4$ with heavy nitrogen of 10-fold enrichment was given to some plants in the dark through the roots. Leaves of other plants were cut off and floated on the same solution. Some of the cut-off leaves were exposed to sunlight while others were kept in the dark The treated plants were arranged so that some of their leaves were exposed to sunlight and other leaves were kept in darkness. After 4 hr, heavy nitrogen was determined by the method described previously (Akademiya Nauk SSSR, Doklady 87: 301, 1952). An intensified admission of heavy nitrogen was always found in the leaves exposed to sunlight, which indicates the synthesis of amino acids and albumins during photosynthesis. In the other series of experiments a device designed by Yu. I. Novitskiy (Fiziol. Rastenii Akad. Nauk SSSR 3: 574, 1956) was used to introduce radioactive $C^{14}O_2$ into the leaves of bean, corn, and sunflower plants grown in ordinary soil in vegetation vessels. The quantitative relations in the composition of the products of photosynthesis depended on the kind of plant, its age, physiological condition, and external effects.

Bernhard, K., Bühler, U., and Bickel, M. H.
BIOCHEMICAL BEHAVIOR OF A PSYCHOANALEPTIC, PHENYL-PIPERIDYL-ACETIC ACID-METHYL ESTER (Zum Biochemischen Verhalten eines Psychoanaleptikums, des Phenyl-piperidyl-essigsäure-methylesters). [1959] 11p.
Order from SLA mi$2.40, ph$3.30 59-15951

Trans. of Helvetica Chimica Acta (Switzerland) 1959, v. 42, no. 3, p. 802-807.

-α-Phenyl-α-piperidyl-(2)-acetic acid methylester or Ritalin is degraded hydrolytically, according to experiments on rats, and most of it is excreted in the urine as phenyl-piperidyl acetic acid. It has a half-life value of 6-7 hrs. Even after 15 hrs., very insignificant activity remains in the organs and carcass. Short experiments (15, 30 and 60 min.) provided information on the distribution of the compound in the liver, blood and separate areas of the brain. The specific activities are always higher in the hemispheres and brain stem than in the cerebellum, the medulla oblongata and the spinal cord.

Dittrich, Johannes.
THE EFFECTS OF CYANAMIDE. IV (Über die Cyanamidwirkung IV). [1959] [22]p. (1 graph omitted) 11 refs.
Order from SLA mi$2.70, ph$4.80 59-15422

Trans. of Zeit[schrift für die] Ges[amte] Exp[erimentelle] Med[izin] (Germany) 1924, v. 43, p. 270-280.

The effect of cyanamide on typical enzymes (pepsin, trypsin, invertin, amygdalin, serum lipase, peroxidase and catalase) was investigated. Experiments indicate that cyanamide has no influence on enzyme reactions, except in the case of catalase, which it inhibits.

Jalón, P. García de, Bayo, J. Bayo, and Jalón, M. García de.
SENSITIVE NEW METHOD OF ADRENALIN DETERMINATION IN THE ISOLATED UTERUS OF RAT. [1958] 9p. (5 figs. omitted) 20 refs.
Order from SLA mi$1.80, ph$1.80 59-10833

Trans. of Farmacoterapia Actual (Spain) 1945, v. 2 [no. 2] p. 313-318.

Jayle, M. F., Decourt, Jacques, and Crépy, O.
ELIMINATION OF BUTYLOSOLUBLE GLYCURONIDATES AND OF THEIR ACETONE-INSOLUBLE FRACTION CONTAINING PREGNANEDIOL IN NORMAL MAN AND IN CERTAIN CASES OF FEMINISM (GYNECOMASTIA, HOMOSEXUALITY) (Elimination des Glycuronidates Butylosolubles et de leur Fraction Acétoninsoluble Contenant le Prégnanediol chez l'Homme Normal et dans Certains cas de Féminisme (Gynécomastie, Homosexualité)). [1959] 6p. 5 refs.
Order from SLA mi$1.80, ph$1.80 59-15540

Trans. of Annales d'Endocrinologie (France) 1949, v. 10 [no. 2] p. 161-166.

Kondo, Tsutomu.
AMINE ACID METABOLISM IN BRAIN. II. STUDIES ON γ-AMINOBUTYRIC ACID; GLUTAMIC ACID TRANSAMINATION. [1959] [10]p. (refs. omitted).
Order from SLA mi$1.80, ph$1.80 59-15772

Trans. of [Seikagaku] (Japan) 1958, v. 30, no. 6, p. 446-448.

The γ-aminobutyric acid - glutamic acid transaminase activity in the brains of various kinds of animals was compared. In the mouse the activity was high; next in the order of activity were: dog, fish, frog, rabbit, and chicken. No significant differences were discerned among the brains of the dog, fish, frog, rabbit. Even in the brains of the low-order animals such as the frog and fish the activity was high. Mouse, rabbit, chicken brains were divided into cerebrum, mesencephalon, cerebellum, and their γ-aminobutyric acid - glutamic acid transaminase activities were compared. In general, the cerebellum displayed a somewhat higher value and the cerebrum displayed a somewhat lower value. In the dog brain, the caudate nuclei displayed a high value and that the order of activity was: cerebellum, lenticular nuclei, thalamus, cerebral gray matter, and finally cerebral white matter, with the lowest value of all.

Kondo, Tsutomu.
AMINO ACID METABOLISM IN THE BRAIN. III. STUDIES ON TRANSAMINATION AT VARIOUS SPOTS IN THE BRAIN. [1959] [11]p. (1 fig. omitted) 25 refs.
Order from SLA mi$2.40, ph$3.30 59-15773

Trans. of [Seikagaku] (Japan) 1958, v. 30, no. 6, p. 449-452.

The transamination of asparaginic acid, α-aranein, isoleucine, and β-aranein, which contain a large amount of transference glutamic acids, with α-ketoglutaric acid was examined at the various sites in the brain of the dog, in the same manner as in previous report (59-15772). The increase and decrease in the amount of transference glutamic acid for each amino acid at various sites of the brain was compared. Results indicate that the enzymes which participate in transamination between γ-aminobutyric acid and glutamic acid are the same as those in the case of β-aranein and that they are different from those enzymes which participate in transamination between the other α-amino acids and glutamic acid.

Raida, Hanns.
THE EFFECTS OF CYANAMIDE. III. QUANTITATIVE CYANAMIDE DETERMINATIONS IN TISSUES. [1959] [10]p. 3 refs.
Order from SLA mi$1.80, ph$1.80 59-15423

Trans. of Zeit[schrift für die] Ges[amte] Exp[erimentelle] Med[izin] (Germany) 1923, v. 31, p. 215-220.

Matsuura, Yasushi, Chen-Rong, Lin, and Lie Ping, Hong.
THE BLOOD SUGAR CHANGE FOLLOWING TOXOPYRIMIDINE ADMINISTRATION. Nov 54 [12]p. 14 refs.
Order from SLA mi$2.40, ph$3.30 59-15437

Trans. of [Seikagaku (Japan) 1957, v. 29, p. 290-293].

Blood sugar levels in white rats were found to be significantly decreased upon administration of 2-methyl-4-aminohydroxymethyl pyrimidine, following a 2 to 3 wk diet in which vitamin B_6 was either lacking or restricted. All rats suffered severe spasms. Results are compared with those of other investigators as reported in the literature.

Matsuura, Yasushi, Chen-Song, Lin, and Lie Ping, Hong.
THE BLOOD SUGAR CHANGE FOLLOWING TOXOPYRIMIDINE ADMINISTRATION [AND] THE BLOOD SUGAR CHANGE OF THE DIABETIC RAT FOLLOWED TOXOPYRIMIDINE ADMINISTRATION. Nov 54, 14p. (8 figs. omitted) 14 refs.
Order from SLA mi$2.40, ph$3.30 59-15774

Trans. of [Seikagaku] (Japan) 1957, v. 29 [no. 5] p. 290-293.

Theorell, Hugo and Maehly, Andreas C.
INVESTIGATIONS AT SYNTHETIC PEROXIDASES. [1959] 16p. (figs. omitted) 15 refs.
Order from SLA mi$2.40, ph$3.30 59-15177

Trans. of Acta Chemica Scandinavica (Denmark) 1950, v. 4 [no. 3] p. 422-434.

Weitzel, Gunther, Fretzdorff, Anna Maria, and Heller, Siegfried.
BIOCHEMISTRY OF BRANCHED CARBOXYLIC ACIDS. X. COMMUNICATION. MONOMOLECULAR FILMS OF MONOMETHYLATED STEARIC ACIDS (Biochemie Verzweigter Carbonsäuren. X. Mitteilung. Monomolekulare Filme der Einfach Methylierten Stearinsäuren). [1958] [18]p. 20 refs. Tr57-124.
Order from SLA mi$2.40, ph$3.30 59-10589

Trans. of Hoppe-Seyler's Zeit[schrift für] Physiologische] Chem[ie] (Germany) 1951, v. 288 [no. 4/6] p. 200-215.

The antitubercular properties of monomethylated stearic acids are dependant upon the position of the methyl group. The odd-numbered carbons are effective. Since it is believed that these properties are based on the structure of the molecule, calculations were made of the minimum areas of normal fatty acids in a film which point to the fact that the axis of rotation is formed by the odd-numbered C-atoms of the chain.

Botany

Frohberger, P. E.
RESEARCHES ON THE BEHAVIOR OF THE INSECTICIDE DIETHYL-p-NITROPHENYL-THIOPHOSPHATE (E 605) ON AND IN PLANTS. [1959] [145]p. 29 refs.
Order from SLA mi$7.20, ph$22.80 59-15577

Trans. of doctoral thesis in German, Cologne U.

Research carried out to throw light on the problem of the behavior of foreign organic compounds in and on plants is described. Spraying of E 605 on various plants in concentrations of about 0.02% had no visible effect on habit or tissues. In most cases the vegetation points remained undamaged, and new and perfectly normal leaves were formed. Where injuries occurred they were locally limited to the treated parts of the plants. All vegetable tissues tested were permeable to E 605. Most of the preparation coated on fruits dissolved in the covering lipoids of the fruits within 24 hr. The fruit pulp remained free of the preparation. An accumulation of E 605 in the vegetable tissue could not be detected. Transpiration gases and root secretions were non-toxic. In the living tissue of green leaves, E 605 undergoes a quick and complete fermentative inactivation which is independent of light and of chlorophyll. The cytoplasm is considered to be the site of inactivation.

Schröck, O. von
THE INHERITANCE OF EARLY BLOOMING OF SCOTCH PINE (Der Vererbung der Frühblüte der Kiefer). [1959] [28]p. 17 refs.
Order from SLA mi$2.70, ph$4.80 59-15464

Trans. of der Züchter (Germany) 1949, v. 13, no. 8/9, p. 247-254.

Experience indicates that the early blooming of pine trees is hereditary and is not modified through injury or isolation. The early blooming trees, in their productive ability in height and diameter growth, are just as valuable as those which bloom later. It is assumed that the property of premature blooming was introduced into indiginous pine races through pollen from foreign race stands. The present observations indicate that the dominant inheritance process is present. The increased appearance of dioecious forms as compared to those normally monoecious is striking.

General Biology

ANNOTATED BIBLIOGRAPHY OF SOVIET AIR AND SPACE PROJECTS (AEROMEDICAL ASPECTS).
19 May 59 [29]p. AF 1255805.
Order from LC or SLA mi$2.70, ph$4.80 59-16479

Trans. from Soviet open sources, 1951-1959.

Abstracts are given for over 100 papers on problems in space flight. The papers are listed alphabetically by author under the headings: (1) aeromedical program; (2) air personnel: selection and training; (3) human engineering; (4) manned weapon system; (5) space projects; (6) space vehicle life support systems: algae photosynthesis.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR)
1958 (Soviet Abstracts. Biology)
Order from OTS $1.00 each

Contents:
Section B. General Biology.

No. 16, Abstracts 71492-71684, JPRS: 1684-N, 59-13612
No. 20, Abstracts 90257-90470, JPRS: 1763-N, 59-13715
No. 21, Abstracts 94516-94728, JPRS: 1742-N, 59-13693

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Cerny, V. and Balat, F.
A CASE OF INTRODUCTION OF HYALOMMA PLUMBEUM (PANZ.) 1795 (IXODIDAE) BY BIRDS INTO THE TERRITORY OF CSR [CZECHOSLOVAKIA]. [1959] 3p. 11 refs. Trans. 7 (T7).
Order from SLA mi$1.80, ph$1.80 59-15895

Trans. of Zoologicke Listy (Czechoslovakia) 1957, v. 20, no. 1, p. 81-83.

Galuzo [I. G.].
KEY TO THE GENUS ORNITHODOROS (OF RUSSIA) (AFTER PAVLOVSKY, 1955): FEMALES AND MALES. [1959] 3p. Translation no. 4 (T4).
Order from LC or SLA mi$1.80, ph$1.80 59-15903

Trans. of mono. Argasid Ticks and their Epizootological Significance, Alma-Ata, 1957, p. 83-85.

Kuhnemann, Oscar.
MODIFICATION OF THE PLANKTON OF THE WATER OF THE RIO DE LA PLATA DURING STORAGE IN AN ARTIFICIAL LAKE (Modificacion del Plancton del Aqua del Rio de la Plata durante el Almacenamiento en un Lago Artificial). [1959] [9]p. 15 refs.
Order from SLA mi$1.80, ph$1.80 59-15952

Trans. of Actas de Tercer Congreso Ingenieria Sanitaria Interamericano, Buenos Aires, R. Argentina, 19-30 Nov 52, p. 689-697.

Plankton samples were taken over a 3-mo period from the water of the Rio de la Plata and an artificial lake (Balneario Norte) which it feeds. The lake showed the limological characteristics of a backwater according to the definition of P. S. Welch. Up to 1,000 microorganisms per ml were taken from the river water,

compared with 30,000/ml for the lake. The difference is attributed to the negligible current of the lake. Of the 57 recognized genera of plankters, 43 were phytoplankton and 14 were zooplankton. Diatoms predominated in the river, while species of Clorophycea and Cianophycea were dominant in the lake. Five species of plankters new for Argentina were found.

Kurchatov, V. I.
BIOLOGICAL PECULIARITY OF THE TICK HYALOMMA MARGINATUM KOCH, VECTOR OF EQUINE PIROPLASMOSIS. [1959] 2p. Trans. no. 6 (T6).
Order from LC or SLA mi$1.80, ph$1.80 59-15897

Trans. of Veterinariya (USSR) 1939, v. 16, no. 5, p. 45-46.

Pospelova-Shtrom, M. V. and Abusalimov, N. S.
CASE OF COLLECTING TICK AMBLYOMMA LEPIDUM DÖNITZ, 1909, IN AZERBAIJAN. [1959] 2p. Trans. 1 (T1).
Order from LC or SLA mi$1.80, ph$1.80 59-15817

Trans. of Med[itsinskaya] Parazitol[ogiya] i Parazitar[nyye] Bolezni (USSR) 1957, v. 26, no. 1, Suppl. p. 56.

Pospelova-Shtrom, M. V.
CONCERNING CERTAIN GROUPS WITHIN THE GENUS HAEMAPHYSALIS C. L. KOCH, AND THEIR TAXONOMIC SIGNIFICANCE. [1959] [8]p. (3 illus. omitted) 11 refs. Trans. 8(8).
Order from LC or SLA mi$1.80, ph$1.80 59-15841

Trans. of Med[itsinskaya] Parazitol[ogiya] i Parazitar[nyye] Bolezni (USSR) 1945, v. 14, no. 1, p. 12-18.

Rauzer-Chernousova, D. M. and Reitlinger, Ye. A.
THE DEVELOPMENT OF FORAMINIFERA DURING THE PALEOZOIC AND THEIR STRATIGRAPHIC SIGNIFICANCE (Razvitiye Foraminifer v Paleozoyskoye Vremya i ikh Stratigraficheskoye Znacheniye). [1959] 26p.
Order from ATS $36.65 ATS-46L31R

Trans. of Akad[emiya] Nauk SSSR. Izvest[iya]. Ser[iya Geol[ogicheskaya] 1957, no. 11, p. 103-124.

A detailed review is given of the genetic development of foraminifera during the Paleozoic era. The fauna of foraminifera of the Kuzbass is compared with the fauna discovered on the American continent. Beginning with the Middle Carboniferous period, the leading role of foraminifera is taken over by fusulinida, which reached 22 genera with 646 species during this period. These fossils were found on all continents, with the exception of Australia. 22 different genera of fusulinides are listed, with their respective number of species of the Middle Carboniferous period found in different countries.

Shilova, S. A. and Krylov, D. G.
CHANGES IN THE ROLE PLAYED BY BIRDS IN CENTRES OF TICK ENCEPHALITIS AS A RESULT OF TIMBER CUTTING. [1959] [10]p. 8 refs. Trans. 15 (T15).
Order from LC or SLA mi$1.80, ph$1.80 59-15902

Trans. of Moskovskoye Obshchestvo Ispytateley Prirody. Byulleten'. Otdel Biologicheskiy (USSR) 1957, v. 62, no. 6, p. 25-29.

Tick foci have formed in recent years in many districts of the USSR where tick encephalitis has been observed. Tabulations show the changes occurring in the proportion of different bird species, number of birds, and quantity of ticks they carry in tick foci in the vicinity of timber cutting, as compared to virgin forest. 1050 birds were examined. The species of tick-carrying birds are more varied, and their number much greater, in anthropurgical centers than in the forest.

Microbiology

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Contents:
Section E. Virology.

No. 18, Abstracts 81198-81319, JPRS: 1753-N, 59-13702
No. 20, Abstracts 90544-90665, JPRS: 1737-N, 59-13690
No. 21, Abstracts 94820-94919, JPRS: 1746-N, 59-13695

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Contents:
Section F. Microbiology.

No. 16, Abstracts 71900-72228, JPRS: 1681-N, 59-13609
No. 18, Abstracts 81321-81632, JPRS: 1739-N, 59-13692

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 7 (Soviet Abstracts. Biology). 8 Dec 58, 18p.
JPRS: Trans 1016-N.
Order from OTS $1.00 59-11169

Contents:
Section E. Virology
Section F. Microbiology. Abstracts 28698-28843.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Alikhanyan, S. I. and Mindlin, S. Z.
HYBRIDIZATION OF ACTINOMYCETES. [1959] 10p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-15404

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1958, no. 4, p. 416-421.

Dubrouil, Robert and Pavilanis, Vytautas.
USE OF A SIMPLIFIED SYNTHETIC MEDIUM FOR THE IN VITRO CULTURE OF ANIMAL CELLS AND POLIOMYELITIS VIRUS. [1959] 12p. 14 refs.
Order from SLA mi$2.40, ph$3.30 59-15393

Trans. of Canadian Journal of Microbiology, 1958, v. 4, no. 5, p. 543-550.

A nutritive medium SN-3 was developed which is composed of Hanks' balanced salt solution (Proc. Soc. Exp. Biol. Med. 71: 196-200, 1949) with glucose, ribose, glutamine and cysteine. The medium is inexpensive and relatively easy to prepare. It can maintain monkey or mouse kidney tissue cultures for several weeks. When supplemented with serum, the medium stimulates the in vitro cellular proliferation of freshly trypsinized monkey kidney tissue and supports the growth of HeLa cells. The medium has been used for the preparation of experimental lots of poliomyelitis vaccine which did not differ in any important way from vaccines prepared with usual media.

Hallauer, C.
THE CULTIVATION AND MODIFICATION OF ATYPIC NEWCASTLE DISEASE (NDV) IN EXPLANTS OF HUMAN ORIGIN. [1959] 15p. (6 tables omitted) 20 refs.
Order from SLA mi$2.40, ph$3.30 59-15754

Trans. of Archiv für die Gesamte Virusforschung (Austria) 1958, v. 8, no. 3 [p. 397-409].

Atypical Newcastle disease virus (NDV) was cultivated from 10 to 70 passages in explants of human tumor cells (HeLa, KB) as well as of normal tissue (amnion, kidney). The virus increase manifested itself in the cytopathogenic effect, in the liberation of hemagglutinin, and in the increase of infectivity. All the tissues which were examined displayed a high degree of primary virus susceptibility, in comparison with the original strain. Comparative virus titrations in the explants and the incubated eggs respectively gave approximately the same infectivity titers. In amnion explants the tissue damage caused by the virus was often incomplete. The surviving tissue proved to be latently infected, and resistant to massive superinfections of atypical and classic NDV. By means of continuous passages in HeLa and amnion explants it was possible to obtain a virus variant that was apathogenic and immunizing for fowls.

Hallauer, C. and Kronauer, G.
THE CULTIVATION AND MODIFICATION OF CLASSIC NEWCASTLE DISEASE VIRUS [NDV] IN EXPLANTS OF THE HeLa HUMAN CARCINOMA STOCK. [1959] 20p. (3 figs. and 4 tables omitted) 27 refs.
Order from SLA mi$2.40, ph$3.30 59-15753

Trans. of Archiv für die Gesamte Virusforschung (Austria) 1958, v. 8, no. 1 [p. 95-112].

The "Brescia" Newcastle disease strain can be adapted to human carcinoma cells of the HeLa strain, and be propagated for 75 passages. Through continuous passages in HeLa cell explants, the original strain was converted to a virus variant of diminished infectivity and of complete apathogenity for fowls. The experimentally produced virus variant to a great extent agreed in its biological characteristics with the natural Newcastle disease mutant (virus N).

Kriss, A. E. and Rukina, E. A.
BACTERIOPHAGE IN THE SEA. [1959] 5p. 9 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15894

Trans. of Akademiya Nauk SSSR. Doklady, 1947, v. 57, p. 833-836.

Kondo, Keiji, Ameyama, Minoru, and Yamaguchi, Tsutomu.
STUDIES ON OXIDATIVE METABOLISM OF GLUCOSE BY ACETOBACTER MELANOGENUM. PT. I. ON THE FORMATION OF 2, 5-DIKETOGLUCONIC ACID. [1959] [12]p. 5 refs.
Order from SLA mi$2.40, ph$3.30 59-15615

Trans. of [Nihon Nogei-Kagakkai Shi] (Japan) [1956, v. 30, p. 419-422].

The fractionation and identification of metabolic products of glucose by Acetobacter melanogenum under the stationary condition, confirmed the production of 2, 5-diketogluconic acid which Tatum and others (J. Biol. Chem. 204: 43, 1953) reported by using the resting cells. Aldehyde, formic acid, acetic acid, gluconic acid, succinic acid, glycolic acid, tartronic acid, 2-ketogluconic acid and three- -pyrone derivatives, i, e, rubiginol, rubiginic acid and comenic acid, and so forth were produced from glucose by means of the present bacteria, and, in addition there was produced one unknown reducing acid. (See also 59-15616)

Kondo, Keiji, Ameyama, Minoru, and Yamaguchi, Tsutomu.
STUDIES ON OXIDATIVE METABOLISM OF GLUCOSE BY ACETOBACTER MELANOGENUM. PT. II. THE PRESUMPTION OF THE PATHWAY OF GLUCOSE DEGRADATION. [1959] [10]p. 9 refs.
Order from SLA mi$1.80, ph$1.80 59-15616

Trans. of [Nihon Nogei-Kagakkai Shi] (Japan) [1956, v. 30, p. 423-426].

Paper chromatographic studies made over a period of 6 mo are described.

Kunisuke, Miki.
STUDIES OF THE PHAGE MULTIPLICATION IN INDUCED LYSOGENIC BACTERIA. II. EFFECTS OF VISIBLE LIGHT ON THE ULTRAVIOLET INDUCTION OF E. COLI, K-12 (λ). [1958] [37]p. (1 table omitted) 22 refs.
Order from SLA mi$3.00, ph$6.30 AEC-tr-3524

Trans. of Nihon Saikingaku Zasshi (Japan) 1956, v. 11, no. 9, p. 803-812.

Wollmann, E. and Aberbuch, M.
BILIARY LYSIS OF PNEUMOCOCCI. TRANSMISSION TO STRAINS NORMALLY NON SOLUBLE. APPLICATION TO THE DIFFERENTIAL DIAGNOSIS OF PNEUMOCOCCUS (Lyse Biliaire des Pnsumocoques. Transmission à des Souches Normalement non Solubles. Application au Diagnostic Differentiel du Pneumocoque). [1959] 3p. 1 ref.
Order from SLA mi$1.80, ph$1.80 59-15541

Trans. of Aca[demie Nationale de] Med[ecine, Paris]. Bull[etin] (France) 1932 [ser. 3] v. 107 [no. 4] p. 126-128.

Zeidler, H. and Taubeneck, Ul.
A METHOD FOR THE SIMULTANEOUS RECORDING OF DISSOLVED OXYGEN, REDOX-POTENTIAL, HYDROGEN ION CONCENTRATION AND RELATIVE TURBIDITY IN BACTERIA CULTURES (Eine Methode zur Gleichzeitigen Registrieren von Gelöstsauerstoff, Redox-Potential, Wasserstoffionenkonzentration und Relativer Trübung in Bakterienkulturen). [1959] [13] p. (1 fig. omitted) 24 refs. Tr57-99.
Order from SLA mi$2.40, ph$3.30 59-10661

Trans. of [Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten. Abt. 2.] (East Germany 1956, v. 109, p. 516-523.

A device is described which affords accurate simultaneous recording of various metabolic phenomena in bacterial cultures and which satisfies the specific requirements of microbiological investigation (the unit can be sterilized, foreign infections can be avoided during the test period, etc.)

Pathology

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology)
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Contents:
Section U. General Problems of Pathology.
No. 13, Abstracts 60935-61277, JPRS: 1738-N, 59-13691
No. 21, Abstracts 98060-98369, JPRS: 1679-N, 59-13607

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Brener, Z., Pellegrino, J., and Oliveira, Fidalma C.
EXPERIMENTAL TREATMENT OF MANSON'S SCHISTOSOMIASIS. APPLICATION OF THE METHOD OF ISOLATION OF GRANULOMAS FROM THE LIVER OF MICE. 17 Apr 59, 10p. (2 figs. omitted) 10 refs.
Order from SLA mi$1.80, ph$1.80 59-15602

Trans. of Revista Brasileira de Malariologia e Doenças Tropicais, 1956, v. 8, no. 4, p. 583-587.

Results of the application of the method developed by Pellegrino and Brener (J. Parasitol., 42: 564, 1956) for the isolation of granulomas of the liver in the evaluation of the effects of Fuadin in experimental schistosomiasis are reported. 17 mice received percutaneous inoculation of 300 cercariae. On the 31st day post inoculation, they were divided into 2 groups, one of which received Fuadin intraperitoneally in doses of 125 mg/kg body wt twice daily for 5 days. These animals and those of the control group were sacrificed on the 54th day after inoculation. A total of 15,941 granulomas was isolated from the 10 untreated mice. Granulomas were found in only one of the 7 treated mice (a total of 36 granulomas).

Brossa, S. Quer.
INDUSTRIAL ASPIRATION PNEUMOPATHY DUE TO INHALATION OF NITROUS FUMES (Neumopatía Profesional por Inhalación de Vapores Nitrosos). [1958] 10p. (2 figs. omitted) 9 refs. Tr57-1.
Order from SLA mi$1.80, ph$1.80 59-10849

Trans. of Medicina y Seguridad del Trabajo (Spain) 1955, v. 3, Apr-June, p. 75-81.

Busse, Otto.
PARASITIC INTRACELLULAR INCLUSIONS AND THEIR CULTURING (Über Parasitäre Zelleinschlüsse und ihre Züchtung) tr. by R. A. Pyka. 13 Dec 58 [3]p. [4 figs. omitted].
Order from SLA mi$1.80, ph$1.80 59-10349

Summary trans. of Zentralblatt für Bakteriologie, Parasitenkunde und [Infektionskrankheiten] (Germany) 1894, v. 16, p. 175-180.

Cattan, R., Gorins and Lévy, Cl.
PREVENTION OF MILD INCIDENTS TO THE USE OF ANTIBIOTICS OF THE TETRACYCLIN GROUP BY SYSTEMATIC COMBINATION WITH SULFAGUANIDINS. [1959] [5]p.
Order from SLA mi$1.80, ph$1.80 59-15752

Trans. of Archives des Maladies de l'Appareil Digestif [et des Maladies de la Nutrition] (France) 1955, v. 44, no. 9-10, p. 1081-1083.

Patients presenting various abdominal syndromes, notably acute hemorrhagic and purulent rectocolitis, were successfully treated with tetracycline hydrochloride and aureomycin in combination with sulfaguanidine. A case history is cited, to show that 77 g tetracycline was administered over a period of 2 mo without any occurrence of diarrhea. There were liquid stools in only 2 cases out of 30: the condition was corrected when treatment was suspended for a few days.

Daniélopolu, D.
SURGICAL TREATMENT. I. HISTORY. PRINCIPLES OF THE DIFFERENT METHODS USED. [1959] 6p. (4 figs. omitted). 2 refs.
Order from SLA mi$1.80, ph$1.80 59-15474

Trans. of mono. L'Angine de Poitrine et l'Angine Abdominale, Paris, 1927, p. 332, 334-337, 354-355, and 357.

Case history, relating to resection of the cervicothoracic sympathetic in angina pectoris.

Darnaud, C., Denard, Y., and Moreau, G.
DIABETES FROM OVERWEIGHT (le Diabete par Encombrement Adipeux). [1959] [9]p. 10 refs.
Order from SLA mi$1.80, ph$1.80 59-15528

Trans. of Rev[ue] Int[ernationale] d'Hépatologie (France) 1953, v. 3 (no. 4] p. 525-536.

Statistics are presented which relate to 472 patients, all moderately fat to obese, who developed diabetes mellitus after their 40th year. The adipose tissue of these patients was presumed to have lost its ability to fix glucose. The patients were placed on a strict reducing diet for 1 to 3 mo, with weight losses averaging 6 to 10 kg. In 401 cases an apparent cure of the diabetes resulted and was still maintained after 6 mo to 3 yr observation. Diabetes recurred in 37 patients who neglected their diet and became fat again.

Dylong, O. K.
INTRAVENOUS USE OF REDUCED-TOXICITY STREPTOMYCIN IN COMBINATION TREATMENT OF PULMONARY TUBERCULOSIS. [1959] [8]p. (1 fig. omitted) 12 refs.
Order from SLA mi$1.80, ph$1.80 59-15760

Trans. of der Tuberkulosearzt (West Germany) 1957 [v. 11] no. 9, p. 1-6.

Didrothenate (dihydrostreptomycin pantothenate) was administered in 1 g doses by intravenous drip to 55 patients, in combination with PAS. This type of therapy caused a rapid amelioration of the clinical symptoms and an improvement of the radiological appearance of the lungs in acute cases. There were no serious side effects.

Ebensperger, Heinrich.
A NEW DIURNAL SEDATIVE WITH DEPOT ACTION (Ein Neues Tagessedativum mit Depotwirkung). [1959] 8p. 6 refs.
Order from SLA mi$1.80, ph$1.80 59-15756

Trans. of Ärztliche Wochenschrift (Germany) 1956, v. 11, no. 42, p. 941-943.

Proscalun Perlongettes (N-n-octylatropinebromide-phenobarbital preparation) were administered in depot form to 41 patients suffering from spastic manifestations in the gastrointestinal tract, cardiac neurosis, mild circulatory disturbances, peptic ulcer, psychomotor disturbances, or psychoneuroses. Excellent results are reported in palpably organic pathological conditions, while satisfactory to good results are noted in psychomotor disturbances and psychoneuroses. Intolerance was observed in 2 female patients.

Fontana, G.
CLINICAL EVALUATION OF A NEW LONG-ACTING SULFONAMIDE (Valutazione Clinica di un Nuovo Sulfamidico a Durata d'Azione Protratta). [1959] 14p. 13 refs.
Order from SLA mi$2.40, ph$3.30 59-15880

Trans. of Minerva Med[ica] (Italy) 1958, v. 49 [no. 100] p. 4726-4730.

Investigations relating to the effects of sulfaphenazole are reported. 41 persons presenting inflammatory conditions of the respiratory tract were treated with daily doses of 2 g with subsequent reduction to 1 g/day. Rapid cure was obtained in 80% of the cases of acute bronchitis. Response in relapsed subacute and chronic bronchitis was less prompt. Favorable results were obtained in bronchopneumonia. Sulfaphenazole was well tolerated and there were no unfavorable effects on blood count or liver function. There was no crystal formation found in the urinary sediment.

Gross, F., Noelpp, B. and others.
COMPARATIVE STUDIES OF MEDICINAL CONTROL OF VARIOUS FORMS OF EXPERIMENTAL HYPERTENSION. [1959] [24]p. (11 figs. omitted) 25 refs.
Order from SLA mi$2.70, ph$4.80 59-15743

Trans. of Klinische Wochenschrift (Germany) 1955, v. 33, no. 15/16, p. 372-378.

Comparative experiments were made to check the effects of hydralazine and reserpine on chronic hypertension in the rat (induced by renal encapsulation, or by overdosage of desoxycorticosterone, cortisone or hydrocortisone.) Reserpine definitely inhibited the evolution of hypertension and depressed the hypertension when fully developed. The hypotensive action of both substances was generally evidenced only while they were being administered. Pressure usually rose again upon suspension of treatment.

Guinet, P., Noël, G., and Mornex, R.
LEYDIG CELLS TESTICULAR TUMOR WITH ENDOCRINE SIGNS (Les Tumeurs du Testicule à

Cellules de Leydig avec Signes Endocriniens). [1959] 14p. (8 figs. omitted).
Order from SLA mi$2.40, ph$3.30 59-15677

Trans. of la Revue Lyonnaise de Médecine (France) 1955, v. 4, p. 93-100.

Case history.

Hagemeyer, F. W.
CASE OF GASTROSCHISIS. [1959] 4p.
Order from SLA mi$1.80, ph$1.80 59-15855

Trans. of Zentralblatt für Chirurgie (East Germany) 1955, v. 80 [no. 50] p. 1987-[1991].

Jacobi, Erich.
MYXEDEMA AND PSYCHOSIS (Myxödem und Psychose). Feb 59 [4]p.
Order from SLA mi$1.80, ph$1.80 59-10845

Summary trans. of Archiv für Psychiatrie [und Nervenkrankheiten] (Germany) 1928, v. 86, p. 426-441.

Case history.

Jadin, Jean.
RICKETTSIAL DISEASES OF THE BELGIAN CONGO AND RUANDA-URUNDI. 31 Aug [58] [133]p. 64 refs.
Order from SLA mi$6.90, ph$21.30 59-15739

Trans. of thesis Les Rickettsioses du Congo Belge et du Ruanda-Urundi, Louvain, 1951.

Jonnesco, Thomas.
ANGINA PECTORIS CURED BY RESECTION OF THE CERVICO-THORACIC SYMPATHETIC (Angine de Poitrine Guérie par la Résection du Sympathique Cervico-Thoracique). [1959] 9p.
Order from SLA mi$1.80, ph$1.80 59-15539

Trans. of Aca[demie Nationale de] Med[ecine, Paris]. Bull[etin] (France) 1920 [ser. 3] v. 84, p. 93-102.

Case history.

Kourilsky, Raoul and Gaudin, Olivier.
THERAPEUTIC PROPERTIES OF TRITHIO-PARAMETHOXYPHENYLPROPENE. 5 June 59, 5p. 3 refs.
Order from SLA mi$1.80, ph$1.80 59-15971

Trans. of unidentified French mono.

Experience with 150 patients indicates that in all syndromes in which there is a functional disturbance of the bile secretion, clinical improvement is plainly observed with doses of 0.375 to 0.075 g trithio-paramethoxyphenylpropene within 24 hr. The drug is a choleretic agent with regular and constant activity in 80% of the cases.

Kuntz, E.
TECHNIQUE OF TREATING TUBERCULOSIS BY INTRAVENOUS INFUSION OF PAS-STREPTOMYCIN PANTOTHENATE. [1959] [13]p. 52 refs.
Order from SLA mi$2.40, ph$3.30 59-15431

Trans. of [Beiträge zur] Klinik der Tuberkulose [und Spezifischen Tuberkulose-Forschung] (Germany) 1957, v. 117, no. 2, p. 259-264.

The technique used in more than 2500 slow intravenous instillations of PAS and dihydrostreptomycin with toxicity reduced by means of pantothenic acid in the treatment of many forms of tuberculosis is fully described. The addition of the heparinoid Thrombocid is recommended for the prevention of thrombosis.

Lippmann, Otto.
A RARE CASE OF CONGENITAL FISSURE OF THE ANTERIOR ABDOMINAL WALL, TOGETHER WITH AN ESSAY CONCERNING THE ORIGIN OF ABDOMINAL FISSURES (Ein Seltener Fall von Spaltbildung der Vorderen Leibeswand, nebst Beitrag sur Entstehung von Bauchspalten). [1959] [15]p. (2 figs. omitted) 35 refs.
Order from SLA mi$2.40, ph$3.30 59-15856

Trans. of Zentralblatt für Gynakologie (Germany) 1937, v. 61, 27 Feb. p. 516-524.

Massion, J. and Léonard, P.
BILIARY TRACTS AND FEMININE AND MASCULINE GONADS (Voies Biliares et Gonades Féminines et Masculines). Summary and Conclusions. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 59-15531

Partial trans. (p. 487-488) of Rev[ue] Int[ernationale] d'Hépatologie (France) 1953, v. 3 [no. 4] p. 461-492.

This article refers to the correlation of biliary disturbances with those of the reproductive system.

Neimann, N.
A CASE OF BOUTONNEUSE FEVER OBSERVED IN LORRAINE. [1959] 4p.
Order from SLA mi$1.80, ph$1.80 59-15424

Trans. of Revue Médicale de Nancy (France) 1951, v. 76, Aug/Sept. p. 408-410.

Nohmi, N[ivia].
THERAPY OF INTESTINAL AMEBIASIS; QUINONE-PHENANTHROLINE AND IODOCHLOROXYQUINOLINE (Tratemento da Amebíase Intestinal; Pelas Quinonofenantrolinas e Iodocloroxiquinoleínas). [1959] 10p. 1 ref.
Order from SLA mi$1.80, ph$1.80 59-15682

Trans. of Rev[ista] Bras[ileira de] Med[icina] 1958, v. 15 [no. 8] p. 547-550.

Two derivatives of the quinonophenanthroline group (preparations 11,925 and 11,925-C of Ciba) were used in the treatment of 15 patients in whom intestinal amebiasis had been diagnosed. Optimal results were

obtained with preparation 11,925-C, administered for 10 successive days in dosages of 10 mg/kg body wt, plus 500 mg daily of iodocloroxiquinolein divided into 2 equal doses. Improvement was obtained in 50% of the cases after one series, and in 100% after 2 series.

Peiseler, Horst.
NOTE ON THERAPY OF AUTONOMIC REGULATORY DISORDERS WITH A NEW DIURNAL SEDATIVE IN DEPOT FORM (Beitrag zur Therapie Vegetativer Regulationsstörungen mit einem Neuen Tagessedativum in Depotform). [1959] 5p.
Order from SLA mi$1.80, ph$1.80 59-15755

Trans. of Med[izinische] M[onats]schr[ift] (West Germany) 1956, v. 10, no. 10, p. 672-674.

Proscalun Perlongettes (N-n-octylatropinebromide-phenobarbital) are an oral depot preparation in the form of gelatin capsules containing the active substances divided among about 500 globules of different sizes, having coatings of different thicknesses, so that different dissolution times are assured in several sections of the gastrointestinal tract. In clinical trials in the treatment of 50 patients suffering from cardiac or gastrointestinal disorders, states of excitement or anxiety, itching, eczema, etc., there appeared to be no difference in action from that of other preparations. The depot form affords the advantage of freedom from complaints throughout the working day for ambulatory patients.

Pellegrino, J., Paulini, E. and others.
THE INTRADERMAL REACTION IN SCHISTOSOMIASIS WITH A POLYSACCHARIDE FRACTION ISOLATED FROM CERCARIAE OF SCHISTOSOMA MANSONI. [1959] 11p. 11 refs.
Order from SLA mi$2.40, ph$3.30 59-15599

Trans. of Revista Brasileira de Malariologia e Doenças Tropicais, 1956, v. 8 no. 3, p. 527-534.

A comparative study was made of intradermal reactions in schistosomiasis patients (50 adults) tested with 2 types of antigens prepared from cercariae of Schistosoma mansoni. The first consisted of a total extract, and the second of a polysaccharide fraction isolated according to Fuller's technique (Brit. J. Exp. Pathol. 19 (2): 130-139, 1938). 0.05 ml of different dilutions of antigens were injected into the flexor surface of the forearm, and the outlines of the resulting palpules measured with a planimeter. In every concentration the mean areas obtained with the polysaccharide fraction were smaller than those obtained with the total antigen. The polysaccharide fraction is not the only active ingredient in the cercarial antigen.

Pellegrino, J. and Siqueira, Astolfo F.
PERFUSION TECHNIQUE FOR RECOVERY OF SCHISTOSOMA [MANSONI] FROM EXPERIMENTALLY INFECTED GUINEA PIGS. [1959] 12p. 7 refs.
Order from SLA mi$2.40, ph$3.30 59-15601

Trans. of Revista Brasileira de Malariologia e Doenças Tropicais, 1956, v. 8, no. 4, p. 589-597.

The technique here described for perfusion of the liver and mesentery of experimentally infected guinea pigs embodies Ruiz' technique (Mem. Inst. Butantan 24: 101-110, 1952) with certain modifications.

Pellegrino, J. and Nunes, Rosa M. B.
TECHNIQUE FOR OBTAINING DRIED CERCARIAE OF SCHISTOSOMA MANSONI FOR THE PREPARATION OF ANTIGENS. [1959] 12p. 16 refs.
Order from SLA mi$2.40, ph$3.30 59-15600

Trans. of Revista Brasileira de Malariologia e Doenças Tropicais, 1956, v. 8, no. 2, p. 397-404.

The technique here described was developed by the Brazillian Institute of Malariology. Infected specimens of Australorbis glabratus caught in natural breeding grounds are exposed to sunlight or artificial light for cercarial shedding. The suspension of cercariae is then passed through gauze, concentrated in a Bucher funnel with a porous plate, transferred to sedimentation flasks and refrigerated at 6^{0} C for 3 to 4 hr. The concentrated cercariae are frozen over CO_2 snow, vacuum dried in the presence of $CaCl_2$, and preserved in vacuum-sealed vials.

Pollitzer, R.
REVIEW OF RUSSIAN PAPERS ON PLAGUE. 1958 [66]p. 90 refs.
Order from LC or SLA mi$3.90, ph$10.80 59-10998

Trans. of selected articles from [Gosudarstvennyy Nauchno-Issledovatel'skiy Protivochumnyy Institut. Trudy] (USSR) vols. 8, 10, and 11.

Pollitzer, R.
REVIEW OF RUSSIAN PAPERS ON TULAREMIA. 1958 [47]p. 44 refs.
Order from LC or SLA mi$3.30, ph$7.80 59-10999

Trans. of selected articles from [Gosudarstvennyy Nauchno-Issledovatel'skiy Protivochumnyy Institut. Trudy] (USSR) 1947, v. 6; 1949, v. 8; and 1956, v. 10 and 11.

Pondé, Aide A., Franco, A. G., and Pelosi, A. M.
USE OF INTRAARTERIAL INJECTIONS (Do Emprêgo des Injeções Intra-arteriais). [1958] 6p. (3 figs. omitted) 6 refs.
Order from SLA mi$1.80, ph$1.80 59-10830

Trans. of a Folha Medica (Brazil) 1955, v. 36, 5 Sep, p. 129ff.

Eighteen patients presenting symptoms of various diseases of the circulatory system were treated by injection of acetylcholine, Priscoline, or procaine into the femoral artery. Results of this treatment are shown in tabular form.

Putz, T.
MALFORMATION OF THE VENTRAL CLOSURE LINE (CONGENITAL UMBILICAL HERNIA AND GASTROSCHISIS) (Uber Missbildungen der Ventralen Schliessungslimie. Hernia Funiculi Uimbilicalis und Gastroschisis). 27 Sep 57, 16p. (6 figs omitted) 21 refs.
Order from SLA mi$2.40, ph$3.30 59-15859

Trans. of Geburtshilfe und Frauenheilkunde (Germany) 1939, v. 1, Oct. p. 663-671.

Schoog-Lützenkirchen, A.
PHARMACOLOGY AND CLINICAL STUDY OF ULTRACORTENOL OINTMENT (Pharmakologie und Klinik der Ultracortenol-Salbe). [1959] 11p. 17 refs.
Order from SLA mi$2.40, ph$3.30 59-15881

Trans. of Münch[ener] Med[izinische] W[o]ch[e]n-schr[ift] (West Germany) 1958, v. 100 [no. 50] p. 1974-1976.

Clinical experience for more than 2 yr in the treatment of several thousand patients suffering from circumscribed infected and non-infected dermatoses is reported. Ultracortenol ointment (prednisolone trimethyl-acetate with 0.5% quaternary ammonium base Bradosol which has an antimycotic action) was applied 2 or 3 times daily in a thin layer. Most eczemata reacted favorably but required a prolonged course of treatment.

Silva-Goytia, Roberto and Elizondo, Alfonso.
RESEARCH ON SPOTTED FEVER IN MEXICO. II. HEMATOPHAGOUS PARASITES FOUND NATURALLY INFECTED. [1959] 11p. 15 refs.
Order from SLA mi$2.40, ph$3.30 59-15741

Trans. of Medicina; Revista Mexicana, 1952, v. 32, June, p. 278-282.

Among 83 lots of hematophagous parasites collected in the vicinity of spotted fever cases in the Comarca Lagunera, specimens of Ornithodoros nicollei collected inside houses, Otobius lagophilus on burros, and Rhipicephalus sanguineus on dogs, were found to be naturally infected with Dermacentroxenus rickettsi. Serological and immunological evidence also indicated that some lots of Pediculus capitis and Pediculus vestimenti were naturally infected.

Steinitz, K. H.
STEROID THERAPY OF INTRATHORACIC FORMS OF TUBERCULOSIS, ESPECIALLY BRONCHIAL TUBERCULOSIS (Zur Steroidbehandlung der Intrathorakalen Tuberkuloseformen, Speziell der Bronchustuberkulose). [1958] 5p.
Order from SLA mi$1.80, ph$1.80 59-10836

Trans. of Schweiz[erische] Z[ei]tschr[ift für] Tuberk[ulose und Pneumonologie] 1958, v. 15 [no. 4] p. 198-201.

Twenty-eight bronchial tuberculosis patients who were receiving the usual specific tuberculostatic therapy at the Bernische Heilstätte were given additional treatment in the form of prednisolone inhalation (twice daily in doses up to 8 drops) or peroral prednisone (25 mg daily, with gradually reduced doses). At the end of the series 40 U ACTH, extended over a 3 day period, where administered as a booster. The resultant rapid healing of inflammatory processes in the bronchial tree shortened the treatment from the customary 4 1/2 mo average to an average of 2 mo.

Stephan, E.
RESERPINE IN CARDIOLOGY ASIDE FROM HYPERTENSION (La Réserpine en Cardiologie en dehors de l'Hypertension). [1959] 25p. 12 refs.
Order from SLA mi$2.70, ph$4.80 59-15453

Trans. of Rev[ue] Méd[icale du] Moyen-Orient (Lebanon) 1958, v. 15 [no. 3] p. 195-208.

Clinical experience in the administration of reserpine in more than 600 cases is reported. The drug was used successfully in tachycardias accompanying neurocirculatory asthenia, thyrotoxicosis, bronchial asthma, and cerebral hemorrhage. It is noted that the cerebral hemorrhage patient had a pulse accelerated to 160/min, which was reduced by reserpine therapy to 80/min. Reserpine was administered with equal success in paroxysmal tachycardias, auricular fibrillation, angina pectoris with tachycardia, and myocardial infarction. Patients with progressive cardiac rheumatism and cardiac insufficiencies responded favorably. There is a brief summary of the side effects of reserpine therapy.

Tappeiner, J., Tirschek, H. and Wodniansky, P.
DETERMINATION OF HISTAMINOPEXY FOR THE ASSESSMENT OF ALLERGY (ALLERGISCHES TERRAIN) (Die Bestimmung der Histaminopexie zur Feststellung des Allergischen Terrains). Feb 59 [2]p.
Order from SLA mi$1.80, ph$1.80 59-10699

Partial trans. (Zusammenfassung, p. 266-267) of Archiv für Klinische und Experimentelle Dermatologie (Germany) 1958, v. 207 [no. 3] p. 261-267.

Trofimov, V. V.
THE TRAINING OF MEDICAL PERSONNEL IN THE RSFSR FROM 1959-1965. 18 May 59, 10p. JPRS: L-782-N.
Order from OTS $0.50 59-13519

Trans. of Klinicheskaya Meditsina (USSR) 1959 [v. 37] no. 1, p. 12-18.

Veran, Paul, Baron, F. and others.
EFFECTIVENESS AND TOLERANCE OF PANTOTHENIC DIHYDROSTREPTOMYCIN IN THE TREATMENT OF PULMONARY TUBERCULOSIS. [1959] 7p.
Order from SLA mi$1.80, ph$1.80 59-15425

Trans. of Sem[aine des] Hôp[itaux de] Paris (France) 1957 [v. 33] no. 51/52, p. 3043-3044.

Villa, L. and Sala, G.
CLINICAL INVESTIGATION WITH 4-HYDROXY-17ALPHA-METHYLTESTOSTERONE. 7 Jan 59, 10p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-15388

Trans. of unidentified Italian mono.

Clinical experience is reported in the administration of 4-hydroxy-17 alpha- methyltestosterone to 29 selected patients suffering from pleurisy, rheumatic fever, etc. This steroid is active by the oral route. In daily doses of 30 mg, it increases body wt and appetite and generally improves the condition of weak, emaciated patients. In patients undergoing corticosteroid treatment for rheumatoid arthritis, an anticatabolic action was observed, with correction of the adverse effect of corticosteroids on nitrogen metabolism. Improvement in patients suffering from osteoporosis is ascribed to acceleration of protein deposition at the matrix of bone.

Wernicke, Robert.
PROTOZOAL ORGANISMS IN MYCOSIS FUNGOIDES (Über Einen Protozoenbefund bei Mycosis Fungoides) tr. by R. A. Pyka. 13 Dec 58 [2]p.
Order from SLA mi$1.80, ph$1.80 59-10365

Summary trans. of Zentralblatt für Bakteriologie, Parasitenkunde und [Infektionskrankheiten] (Germany) 1892, v. 12, p. 859-861.

Pharmacology and Toxicology

CLINICAL INVESTIGATION OF A SUBSTANCE DESIGNATED BY THE CODE F I 5836 (FARMITALIA). [1959] [4]p.
Order from SLA mi$1.80, ph$1.80 59-15546

Trans. of unidentified Italian mono.

The steroid F. I. 5836 was administered orally in 2 daily doses up to 5 mg to infants who were failing to gain weight, and in doses from 0.5 to 1 mg/kg body wt to children 5 to 12 yr of age who were recovering from minor diseases. Response in terms of weight gain in the infants was nominal, while 9 of the 12 older children responded positively with average weight gains of 1.04 kg in 8 days of treatment. No harmful side effects were observed.

IN THE USSR MINISTRY OF AGRICULTURE (V Ministerstve Sel'skogo Khozyaystva SSSR). 16 Apr 59, 2p. Trans. V1418.
Order from LC or SLA mi$1.80, ph$1.80 59-16148

Trans. of Veterinariya (USSR) 1959, v. 36, no. 3, p. 91.

Simplified equipment has been developed for large-scale production of biomycin for piglets and for use on poultry farms.

METABOLIC RESEARCH ON SUBSTANCE F. I. 5836. [1959] 7p. (6 figs. omitted) 4 refs.
Order from SLA mi$1.80, ph$1.80 59-15549

Trans. of unidentified Italian mono.

Clinical experience in the administration of the steroid F. I. 5836 is reported. When the substance is employed in daily doses of about 40 mg, there appears to be a marked switch to positive nitrogen balance and retention of calcium and phosphorus. Daily doses of 20 to 30 mg exert a positive influence on calcium retention in the presence of osteoporosis due to rheumatoid arthritis, after prolonged cortisone therapy.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Contents:
Section V. Pharmacology and Toxicology.

No. 20, Abstracts 94107-94361, JPRS: 1775-N, 59-13723
No. 21, Abstracts 98372-98646, JPRS: 1717-N, 59-13659
No. 23, Abstracts 107214-107491, JPRS: 1704-N, 59-13649

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Aver'yanova, L. L.
THE EFFECT OF ANTIBIOTICS ON THE IMMUNOLOGICAL REACTIVITY OF THE ORGANISM. [1959] [5]p.
Order from LC or SLA mi$1.80, ph$1.80 59-15751

Trans. of *[Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii] (USSR) 1957, v. 28, no. 4, p. [37-38].

The effect of antibiotics on the development of immunity to typhoid fever in dogs was investigated. Group 1 received penicillin, biomycin and terramycin in 150 doses over a period of 3 yr. Group 2 received similar doses of penicillin and biomycin for 1 yr. Group 3 (control) received no antibiotics. All the animals were immunized 3 times with typhoid fever vaccine administered subcutaneously in doses of 1 ml, 0.5 ml, and 0.5 ml at 10 day intervals. The titer of serum agglutinins as determined on the 7th, 14th, 21st and 30th day after the final immunization was generally identical: the slight variations are attributed to individual peculiarities of the animals.

Bekhli, A. F.
CHEMICAL STRUCTURE AND PARASITICIDAL ACTIVITY. XXI. RELATIONSHIP BETWEEN STRUCTURAL STABILITY AND ANTIMALARIAL ACTIVITY OF 9-AMINOACRIDINE DERIVATIVES. [1959] 6p. 19 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15907

Trans. of *Zhurnal Obshchey Khimii (USSR) 1958, v. 28, no. 7, p. 1901-1904.

Bianchi, A., Schaepdryver, A. F. de and others.
MECHANISM OF THE HYPERTENSIVE ACTION OF SYNTHETIC HYPERTENSIN (Mécanisme de l'Action Hypertensive de l'Hypertensine Synthétique). [1959] 6p. 12 refs.
Order from SLA mi$1.80, ph$1.80 59-15890

Trans. of Arch[ives] Int[ernationales] de Pharmacodyn[namie et de Thérapie] (Belgium) 1959, v. 119, p. 497-501.

Chloralozed dogs, some of which were bilaterally vagotomized, were tested for their reactions to injections of synthetic hypertensin. Neither the chemoreceptors nor the baroreceptors of the carotid sinuses were stimulated by the drug, which had no direct effect on the vasomotor centers. Intracisternal injection of hypertensin did not cause any hypertension. Local application of hypertensin to the carotid sinuses did not produce any hypotension and did not abolish the sinocarotid reflexes. The hypertensive action of hypertensin is a peripheral one and is due chiefly to vasoconstriction.

Casadio, Silvano.
DETERMINATION OF DISINTEGRATION TIME OF PILLS AND TABLETS (Determinazione del Tempo di Disintegrazione delle Compresse e delle Pillole). [1959] 2p.
Order from SLA mi$1.80, ph$1.80 59-15740

Trans. of Boll[ettino] Chim[ico]-Farm[aceutico] (Italy) 1953, v. 92, p. 49-50.

A simple and reliable testing device is described.

Domagk, G.
DEVELOPMENT OF CHEMOTHERAPY IN THE LAST 25 YEARS AND FUTURE PROSPECTS: EXCERPT. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 59-15857

Partial trans. of Münch[ener] Med[izinische] W[ochen]schr[ift] (West Germany) 1958, v. 100, no. 1, p. 16-[23].

Sulfonamides should not be considered to be therapeutically valuable solely on the basis of their effect on the blood count. Some sulfonamides attach so strongly to the plasma protein that they leave the foci of infection completely unaffected. Sulfamerazine and sulfadiazine have not been equalled. Sulfamethoxypyridazine has been shown by tests on mice infected with β hemolytic streptococci to be inferior to these 2 preparations.

Ettorre, R.
PHARMACEUTICAL FORMS FOR ORAL USE WITH PROTRACTED ACTION (Forme Farmaceutiche per Uso Orale and Azione Protratta). [1959] 20p. (1 graph 2 figs. omitted) 64 refs.
Order from SLA mi$2.40, ph$3.30 59-15426

Trans. of Il Farmaco [Edizione Scientifica] (Italy) 1957, v. 12, no. 2, p. 57-72.

Developments in the field of sustained release drugs are surveyed. The article is based on an extensive bibliography. There is no indication of original research on the part of the author.

Foy, A. M. and Arkhangel'skaya, N. V.
CERTAIN DATA ON THE ANALGESIC AND PARTURIFACIENT EFFECTS OF PROMEDOL AND OF ISOPROMEDOL. 18 May 59, 6p. JPRS: L-662-N.
Order from OTS $0.50 59-13495

Trans. of Sovetskaya Meditsina (USSR) 1958, v. 22, no. 2, p. 109-112.

Clinical experience over a period of 6 yr in administration of promedol (a piperidine derivative) to 750 parturient women is discussed. The spasmolytic action of the drug shortens the dilatation period by approximately 2 1/2 hr in primiparous patients and 1 1/2 hr in multiparous patients. The action of isopromedol was studied in 203 patients. Isopromedol is an active analgesic and spasmolytic which does not reduce the intensity of labor and which is not toxic to mother or fetus. The recommended 20 mg dosage produces an effect almost analogous to that observed after administration of 40 mg of promedol.

Gorlov, B. V.
STUDIES OF THE VIABILITY OF SPORES IN THE ANTHRAX STI VACCINE DURING ITS PRESERVATION (Izucheniye Zhiznesposobnosti Spor v Sibireiazvennoy Vaktsine STI Pri yeye Khranenii). [1959] 4p. Trans. V1399.
Order from LC or SLA mi$1.80, ph$1.80 59-14669

Trans. of Gosudarstvennyy Nauchno-kontrol'nyy Institut Veterinarnykh Preparatov. Trudy (USSR) 1956, v. 6, p. 264-266.

Hamalcik, P.
HAS THE NEW ANTIBIOTIC AGENT WITH TRADEMARK "SMPi" A NUTRITIVE MECHANISM OF ACTION? FEEDING EXPERIMENTS ON WHITE RATS. [1959] [4]p.
Order from SLA mi$1.80, ph$1.80 59-15434

Trans. of die Naturwissenschaften (Germany) 1957, v. 44, no. 14, p. 399-400.

Keibl, E. and Bichlbauer, U.
ACTION OF COLCHICINE ON THROMBOPOIESIS (Über die Wirkung des Colchicins auf die Thrombopoese). [1959] 10p. 17 refs.
Order from SLA mi$1.80, ph$1.80 59-15860

Trans. of Klin[ische] Med[izin] (Austria) 1949, v. 4, p. 517-522.

Koelsch, F.
THE TOXICITY OF ETHYLENE CHLOROHYDRIN. [1959] 5p.
Order from SLA mi$1.80, ph$1.80 59-10694

Trans. of Zentralblatt für Gewerbehygiene und Unfallverhutung (Germany) 1927, v. 4, p. 312-316.

Kravchenko, A. T. and Rezepov, F. F.
METHOD FOR THE OBTAINING OF ANTIBOTULINUS SERA FROM CATTLE (Opyt Polucheniya Protivobotulinicheskikh Syvorotok ot Krupnogo Rogatogo Skota). 30 Apr 59, 8p. 7 refs. Trans. V1423.
Order from LC or SLA mi$1.80, ph$1.80 59-16206

Trans. of *Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1959 [v. 30] no. 4, p. 79-92.

Nakamura, Gōgo, Anzai, Kentaro and others.
ON LEUCOMYCIN PRODUCTION BY A NEWLY ISOLATED STREPTOMYCES. [1959] 9p.
Order from SLA mi$1.80, ph$1.80 59-15716

Trans. of J[ournal of] Antibiotics (Japan) Series B. 1956, v. 9, p. 213-217.

Nominé, G., Mathieu, J. and others.
THE PENICILLINATE OF 2,5-DIPHENYLPIPERAZINE, A REPOSITORY FORM OF PENICILLIN. I. 9 Apr 59. 17p. 6 refs.
Order from SLA mi$2.40, ph$3.30 59-15604

Trans. of Annales Pharmaceutiques Françaises, 1958, v. 16, no. 2, p. 125-133.

2,5-Diphenylpiperazine was prepared by the reduction of 2,5-diphenyldihydropyrazine, and its penicillinate was obtained by the addition of triethylamine penicillinate after heating in acetic acid. The new salt was well tolerated by rats, mice, and rabbits when administered intraperitionally or orally. Daily administration of 20,000 Oxford units (O.U.) of diphenylpiperazine penicillinate to young rats for 4 weeks affected neither their growth nor hematopoiesis. Intramuscular administration of 40,000 O.U./kg in rabbits permitted the maintenance of an active concentration in the blood for at least 72 hr. In dogs, oral administrations in a dose of 6,000 O.U./kg assured active concentration in the blood for more than 8 hr.

Oelssner, W.
THE DECOMPOSITION OF PROCAINE AND CLOROPROCAINE IN AQUEOUS SOLUTIONS (Die Zersetzung von Procain und Chloroprocain in Wässrigen Lösungen). [1959] 21p. 21 refs.
Order from SLA mi$2.70, ph$4.80 59-15429

Trans. of Archiv für Pharmazie [und Berichte der Deutschen Pharmazeutischen Gesellschaft] (Germany) 1955, v. 288, no. 4, p. 186-194.

From experiments made by Terp.(Acta Pharmacol. Toxicol. 5:353, 1949) relative to the acqueous hydrolysis of procaine, as well as from our own results, formulas were developed, by the aid of which it is possible to compute, for known pH values and temperatures, the degree of decomposition of aqueous solutions. The differences between procaine and chloroprocaine are discussed; and finally a few possibilities of error are mentioned making use of the results of experiments by other authors.

Ostrovskiy, N. I., Libizov, N. I. and others.
THE ALKALOID CONTENT AND DISTRIBUTION OF ERGOT IN THE USSR. 24 June 59, 9p. 12 refs.
JPRS: L-1734-D.
Order from OTS $0.50 59-11669

Trans. of Aptechnoye Delo (USSR) 1959, v. 8, no. 1, p. 29-34.

Verschure, J. C. M.
ROUTINE EXAMINATION OF URINE SPECIMENS WITH REAGENT TABLETS AND REAGENT STRIPS. [1959] 4p. 1 ref.
Order from SLA mi$1.80, ph$1.80 59-15858

Trans. of Ned[erlands] T[ijd]schr[ift voor] Geneesk-[unde] 1958, v. 102 [no. 38] p. 1851-1852.

The feasibility of urinalysis by means of reagent tablets and reagent strips is considered in terms of economic cost to the laboratory. Cost calculations are tabulated in Dutch guilders.

Radiobiology

BIBLIOGRAPHY ON SHIELDING AND RADIATION PROTECTION. 15 Apr 59 [14]p. AF 1255699.
Order from LC or SLA mi$2.40, ph$3.30 59-16472

Trans. from Soviet open sources, 1950-1958.

Descriptive abstracts are given for some 43 references useful in atomic energy engineering. References are arranged alphabetically by author. Library of Congress call numbers are included for most entries.

Moiseyev, P. A.
NEW DATA ON THE EFFECT OF THERMONUCLEAR EXPLOSIONS ON AQUATIC ORGANISMS. 24 June 59, 5p. JPRS: L-1729-D.
Order from OTS $0.50 59-11664

Trans. of Rybnoye Khozyaystvo (USSR) 1958 [v. 34] no. 7, p. 22-24.

The information here presented appears to have been derived primarily from reports presented by Japanese delegates to the 9th Pacific Scientific Congress held in Bangkok in 1957. A steady increase of radioactivity of sea water has been observed over a period of years. By the beginning of 1957 the radioactivity of coastal areas began to equal that of the open reaches of the western Pacific. A table shows the Sr^{90} content of bones of fish indigenous to the coastal areas.

Zoology

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR)
1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Contents:
Section G. Zooparasitology.

No. 12, Abstracts 52960-53038, JPRS: 1759-N, 59-13712
No. 18, Abstracts 81652-81787, JPRS: 1735-N, 59-13675
No. 21, Abstracts 95245-95359, JPRS: 1686-N, 59-13615

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Andriyevskaya, L. D.
THE FOOD OF PACIFIC SALMON IN THE NORTHWESTERN PACIFIC OCEAN (Pitaniye Tikhookeanskikh Lososey v Severo-Zapadnoy Chasti Tikhovo Okeana). 1958 [17]p. 11 refs. Trans. series no. 182.
Order from LC or SLA mi$2.40, ph$3.30 59-15953

Trans. of mono. Materialy po Biologii Morskovo Perioda Zhizni Dalnevostochnykh Lososey, Moscow, 1957, p. 64-75.

The stomach contents of 650 salmon (chum, pink, sockeye) caught during June and July 1955 in the area bounded by the triangle of Cape Kamchatka, Attu Island and Paramushir Island were analyzed to determine the composition of the food and the extent of feeding during migration to the Kamchatka coast. Results are furnished in tabular form. The food composition varies during the summer, and consists primarily of euphausids, Hyperiidae, pteropod molluscs, young fish and Calanoidea. The chum, pink, and sockeye have different feeding rates.

Birman, I. B.
ON THE OCCURRENCE AND MIGRATION OF KAMCHATKA SALMON IN THE NORTHWESTERN PART OF THE PACIFIC OCEAN (O Rasprostranenii i Migratsiyakh Kamchatskikh Lososey v Severo-Zapadnoy Chasti Tikhovo Okeana). 1958 [25]p. (6 figs. omitted) 15 refs. Trans. series no. 180.
Order from LC or SLA mi$2.70, ph$4.80 59-15961

Trans. of mono. Materialy po Biologii Morskovo Perioda Zhizni Dalnevostochnykh Lososey, Moscow, 1958, p. 31-51.

The results of a study of the distribution and migration of salmon within the triangle formed by Cape Kamchatka, Blighnee Island and the Fourth Kurile Strait as observed in June and July 1955, and in the area between the Kuriles and 180° as observed in August and September 1956 are reported. The front of the spawning migration of chum, pink, and sockeye is wide, embracing the whole of the northwest part of the Pacific, from the southeast of Kamchatka and the Kuriles. The wintering place of the Kamchatka salmon extends west to east along the front of the North Pacific Ocean Current.

Hagman, Nils.
GADUS AEGLEFINUS. [1958] 3p. 1 ref.
Order from SLA mi$1.80, ph$1.80 59-10256

Trans. of doctoral dissertation Studien über die Schwimmblase Biniger Gadiden und Macruriden, Lund U., 1921, p. 24-28.

Haler, B.
[ABOUT THE PHYLOGENESIS OF THE KIDNEYS OF BONY FISHES] (Zur Phylogenese des Nierenorgans der Knochenfische). [1958] 3p. (2 figs. omitted).
Order from SLA mi$1.80, ph$1.80 59-10207

Partial trans. (p. 768-772) of Jenaische Zeitschrift für Naturwissenschaft (Germany) 1902, v. 43, p. [729-798].

Ishida, Teruo and Miyaguchi, Kiichi.
ON THE MATURITY OF PACIFIC SALMON (ONCORHYNCHUS NERKA, O. KETA AND O. GORBUSCHA) IN OFFSHORE WATERS, WITH REFERENCE TO THE SEASONAL VARIATION IN GONAD WEIGHT (Okiai ni o Keru Sake-Masu (Oncorhynchus Nerka, O. Keta, O. Gorbuscha) no Seishokuso-Juryo no Henka Kara Mita Seiseijuku ni Kansuru Ikutsukano Mondai ni Tsuite). 1958 [8]p. (16 figs. 6 tables omitted). Trans. series no. 190.
Order from SLA mi$1.80, ph$1.80 59-15963

Trans. of Hokkaido Regional Fisheries Research Lab. Bulletin (Japan) 1958, no. 18, p. 11-22.

Krogyus, F. V.
COMMENTS ON THE CALCULATION OF GROWTH RATE OF YOUNG SALMON (Zamechaniya po Raschisleniyu Tempa Rosta Moloday Lososey). 1958 [4]p. Trans. series no. 196.
Order from LC or SLA mi$1.80, ph$1.80 59-15955

Trans. of Tikhookeanskiy Nauchno-issledovatel'skiy Institut Rybnogo Khozyaystva i Okeanografii. Izvestiya (USSR) 1957, v. 45, p. 199-201.

Methods for calculating the growth of young salmon are compared. The Foerster method, whereby the length is computed from the time of completion of the central scale platelet, is considered to be more accurate than the Lee method, whereby length of the fry is calculated from the moment of laying down of the scale. Results obtained by the 2 methods can be substantially different.

Krogyus, F. V.
ON THE SCALE PATTERN OF KAMCHATKA SOCKEYE OF DIFFERENT LOCAL POPULATIONS (O Stroenii Cheshuy Kamchatskoy Krasnoy Raznykh

Lokalnykh Stad). 1958 [11]p. (15 figs. omitted) 5 refs. Trans. series no. 181.
Order from LC orSLA mi$2.40, ph$3.30 59-15965

Trans. of mono. Materialy po Biologii Morskovo Perioda Zhizni Dalnevostochnykh Lososey, Moscow, 1958, p. 52-63.

A comparative study of the scales of sockeye in the various spawning areas of the Kamchatka peninsula was undertaken in 1955, to determine the possibility of using a method other than tagging for tracing the origins of sockeye caught in the ocean. Differences in hydrological and feeding conditions in the lakes, rivers and springs lead to dissimilar growth and consequently to dissimilar scale patterns, which are described. It is indicated that the scale pattern method could be used in the study of migration routes of separate stocks.

Krogyus, F. V. and Krokhin, E. M.
THE RUN OF SOCKEYE AND THE DAILY TEMPERATURE RHYTHM IN THE PARATUNKA RIVER (Khod Krasnoy i Sutochnyi Ritm Temperatury v. r. Paratunke). 1958 [4]p. 6 refs. Trans. series no.197.
Order from LC or SLA mi$1.80, ph$1.80 59-15956

Trans. of Tikhookeanskiy Nauchno-issledovatel'skiy Institut Rybnogo Khozyaystva i Okeanografii. Izvestiya (USSR) 1957, v. 45, p. 201-202.

A series of synchronized observations of temperatures in the Paratunka River was taken in June and early July when the intensive snow-melt in the Kamchatka mountains occurs. These observations are of interest because it is known that the ascent of sockeye in a river follows a positive temperature gradient. It was found that a wave of cold snow water moves down the river every 24 hr. Upstream from the crest there is a positive temperature gradient, while below it the temperature gradient is negative.

Krokhin, E. M.
SOURCES OF ENRICHMENT OF SPAWNING LAKES IN BIOGENIC ELEMENTS (Istochiki Obogashcheniya Nerestovykh Ozer Biogennymi Elementami). 1958 [10]p. 6 refs. Trans. series no. 207.
Order from LC or SLA mi$1.80, ph$1.80 59-15957

Trans. of Tikhookeanskiy Nauchno-issledovatel'skiy Institut Rybnogo Khozyaystva i Okeanografii. Izvestiya (USSR) 1957, v. 45, p. 29-35.

This report refers to the fertilizing effect of the carcasses of spawned-out adult sockeye. The "biological productivity" of the lakes examined is expressed in terms of the number of algal cells and the phosphate content of the water.

Krykhtin, M. L.
BIOLOGICALLY UNIFORM GROUPS AMONG PACIFIC SALMON (O Biologicheski Odnorodnykh Gruppakh u Dalnevostochnykh Lososey). 1958 [12]p. 11 refs. Trans. series no. 195.
Order from LC or SLA mi$2.40, ph$3.30 59-15962

Trans. of Voprosy Ikhtiologii (USSR) 1958 [v. 9] no. 10, p. 3-11.

The scale structure of 322 masu spawners was examined, in order to determine the characteristics of development during the freshwater and marine cycles respectively. It was found that one may estimate the time of the downstream migration by these characteristics. Since this migration occurs at different times of the year, fish of various groups spend varying times in the ocean and encounter different feeding conditions which affect length, weight, fecundity and growth rate. The "biologically uniform groups" are products of these conditions.

Kurenkov, I. I.
CHARACTERISTICS OF THE HYDROLOGICAL REGIME OF INTERIOR KAMCHATKA BODIES OF WATER IN CONNECTION WITH THE POSSIBILITY OF RESTOCKING THEM (Kharakteristika Gidrologicheskovo Rezhima Vnutrennikh Vodoyemov Kamchatki v Svyazm s Vozmozhnostyu ikh Zarybleniya) 1959 [6]p. 7 refs. Trans. series no. 208.
Order from LC or SLA mi$1.80, ph$1.80 59-15958

Trans. of Tikhookeanskiy Nauchno-issledovatel'skiy Institut Rybnogo Khozyaystva i Okeanografii. Izvestiya (USSR) 1957, v. 45, p. 203-205.

Mordukhai-Boltovskaya, E. D.
SOME ASPECTS OF THE BIOLOGY OF LEPTODORA KINDTII FOCKE AND BYTHOTREPHES LEYDIG AS FOUND IN THE RYBINSK RESERVOIR (Nekotoryye Dannye po Biologiy Leptodora Kindtii Focke i Bythotrephes Leydig Rybinskogo Vodokhranilishcha). June 57, 4p. 2 refs. C. T. S. no. 333.
Order from LC or SLA mi$1.80, ph$1.80 59-14183

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 110, no. 4, p. 688-691.

Moyseyev, P. A.
THE OCEAN FISHERY FOR SALMON AND CERTAIN PROBLEMS FOR STUDY (Morskoy Promysel Lososevykh i Nekotoryye Zadachi Issledovanii). 1958 [7]p. Trans. series no. 178.
Order from LC or SLA mi$1.80, ph$1.80 59-15960

Trans. of mono. Materialy po Biologii Morskovo Perioda Zhizni Dalnevostocknykh Lososey, Moscow, 1958, p. 3-7.

An introductory article for a series of papers which appeared under the collective title, Contributions to the study of the marine period of life of the Far-Eastern salmon. See also 59-15953, 59-15959, 59-15961, 59-15964, 59-15965.

Nikitinskaya, I. V.
ON THE ONSET OF ACTIVE FEEDING OF THE LARVAE OF CLUPEA HARENGUS PALLASI VAL. May 59 [11]p. 8 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15830

Trans. of Zool[ogicheskiy] Zhur[nal] (USSR) [1958] v. 37, no. 10, p. 1568-1571.

Experiments were conducted under aquarial conditions to determine the concentration of food sufficient for herring larvae which are beginning to feed independently. Boiled, finely ground and filtered hens' egg yolks were used. The demand for external food arose within 3 to 4 days after hatching, although herring were observed to survive 7 to 11 days without food after absorption of the yolk sac. Eggs from the same ovaries and fertilized at the same time had different rates of development, with the hatching extended over a period of 5 to 7 days. The embryos differed in size and degree of development: those hatched earlier absorbed the yolk sac in 4 to 5 days and took food early, while those of the last hatching retained remnants of the sac up to 11 days and were significantly less active even in the presence of large concentrations of food. The concentration at which the most active larva began to feed was 1.1 crystals cc water, for the slower feeders 4 crystals/cc. Taking sea conditions into account, it is calculated that a sufficient concentration of plankton for the beginning feeding would be 0.022 food organisms/cc water.

Semko, R. S.
SOME DATA ON THE EXPLOITATION, DISTRIBUTION AND MIGRATION OF FAR-EASTERN SALMON IN THE OPEN OCEAN (Nekotoryye Dannyye o Promysle, Rasprostranenii i Migratskyakh Dalnevostochnykh Lososey v Otkrytom More). 1958 [29]p. 14 refs. Trans. series no. 179.
Order from LC or SLA mi$2.70, ph$4.80 59-15959

Trans. of mono. Materialy po Biologii Morskovo Perioda Zhizni Dalnevostochnykh Lososey, Moscow, 1958, p. 8-30.

Data on salmon catches for 1946-1956 as reported in "Hokkaido Shipping" are analyzed to show the size of the Japanese catches, number of vessels, percentages of salmon stocks in the ocean catch, size of inshore and drift-net catches, and the general extent of the Japanese salmon fishery in the northwest Pacific. The results of investigations on the biology of salmon are reported. Charts show the distribution and direction of migration of individual species in the ocean fishing areas. Suggestions are made for more efficient exploitation within the framework of the Japanese-Soviet fishery convention.

Streltsova, S. V.
DERMAL RESPIRATION OF FISH (Kozhnoye Dykhaniye Ryb). [1959] [7]p. Trans. Series no. 191.
Order from LC or SLA mi$1.80, ph$1.80 59-15901

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 76, no. 1, p. 157-160.

The amount of dermal respiration (O_2 consumption and release of CO_2 through the body surface) of various freshwater fish was determined, with special reference to age and environmental factors. Gill breathing was shut off by a hermetic mask, or a respirator was used which separated the water bathing the head from that which bathed the body surface. The largest value of dermal respiration was found in fish adapted to water in which there may be an oxygen deficit. Gill respiration in fry depends upon oxygen tension in the water, while dermal respiration is independent of it. CO_2 exchange takes place mostly through the gills.

Vishnevskiy, A. A., Shik, L. L. and Khodorov, B. I.
CYBERNETICS IN SURGERY. 24 June 59, 6p.
JPRS: 781-D.
Order from OTS $0.50 59-11672

Trans. of Eksperimental'naya Khirurgiya (USSR) 1959, v. 4, no. 1, p. 6-11.

Data essential to the surgeon and anesthetist could be processed by means of electronic computers in the operating theatre. Machines could be developed which would be capable of synthesizing automatically obtained information and performing such activities as the regulation of an artificial respiration apparatus as needed. Blood vessels can be sutured automatically. Various instruments in bone surgery could be automatically controlled.

CHEMISTRY

*AKADEMIYA NAUK SSSR. OTDELENIYE KHIMICHESKIKH NAUK. IZVESTIYA, 1959 (News of the Academy of Sciences of the USSR, Department of Chemical Sciences).
Order from OTS $0.70, $4.00/6 mo.
Foreign $0.95, $5.50/6 mo.

No. 1, p. 3-181, PB 141 055T-14
No. 2, p. 185-373, PB 141 055T-15
No. 3, p. 379-568, PB 141 055T-16

Consists of abstracts in English.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1959, NO. 2, Abstracts 4217-4553 (Soviet Abstracts. Chemistry). 29 June 59, 52p. JPRS: 1733-N.
Order from OTS $1.00 59-13673

Contents:
Section D. Cosmochemistry, Geochemistry, Hydrochemistry
Section E. Analytical Chemistry
Section F. Laboratory Equipment

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1959, NO. 2, Abstracts 4912-7027 (Soviet Abstracts. Chemistry). 9 July 59, 195p. JPRS: 1765-N.
Order from OTS $1.00 59-13717

Contents:
Section H. Chemical Technology
Section I. High Molecular Chemistry

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

USPEKHI KHIMII (USSR) 1958, V. 27, NO. 12 P. 1361-1517 (Progress of Chemistry). [1959] [7]p. SOV-74-27-12-(1-4)/4.
Order from OTS $0.50, $3.00/6 mo. PB 141 070T-13
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

ZHURNAL OBSCHEY KHIMII (USSR) 1958, V. 28, NO. 11, P. 2909-3154 (Journal of General Chemistry). [1959] 1v. SOV-79-28-11-(1-55)/55.
Order from OTS $1.40, $7.50/6 mo. PB 141 075T-14
Foreign $1.65, $9.00/6 mo.

Consists of abstracts in English.

Analytical Chemistry

*ZHURNAL ANALITICHESKOY KHIMII (USSR) 1959, V. 14, NO. 1, P. 4-144 (Journal of Analytical Chemistry). [1959] 1v. SOV-75-14-1-(1-32)/32.
Order from OTS $0.90, $5.25/year PB 141 071T-7
Foreign $1.15, $6.75/year

Consists of abstracts in English.

Arbuzov, A. E. and Shapshinskaya, O. M.
THE PROBLEM OF THE STRUCTURE OF Ag-SALTS OF DIALKYL HYDROGEN THIOPHOSPHATES. [1959] 6p.
Order from ATS $8.00 ATS-99L29R

Trans. of Khim[iko]-Tekhnol[ogicheskiy] Inst[itut, Kazan]. Trudy (USSR) 1951, no. 16, p. 3-10.

Armand, Marcel and Berthoux, Jean.
DETERMINATION OF SILICON BY PRECIPITATION OF THE YELLOW SILICO-MOLYBDIC COMPLEX BY QUINOLINE (Dosage du Silicium par Précipitation du Complexe Silicomolybdique Jaune par la Quinoléine) tr. by J. W. Palmer. Oct 58 [17]p. 11 refs. Library Trans. no. 774.
Order from SLA mi$2.40, ph$3.30 59-10137

Trans. of Analytica Chimica Acta (Netherlands) 1953, v. 8 [no. 6] p. 510-525.

The conditions of precipitation of complex silico-molybdic yellow (Analytica Chemica Acta 5: 380, 1951) by quinoline were studied from the point of view of the determination of silicon. Under the conditions that produce complete development of the complex, the precipitation is itself quantitative in the presence of an excess of quinoline, the role of which is to make the precipitate insoluble in its formation surroundings. The precipitation of free molybdate is prevented by adding the quantity of acid necessary for complexing it. The precipitate thus obtained filters without difficulty, and only needs to be dried for 1 hr at 150° in order to attain constant weight. It corresponds then exactly to the formula: $SiO_2 \cdot 12MoO_3 \cdot 4(C_9H_7N) \cdot 2H_2O$.

Buděšínsky, B.
COMPLEXOMETRY IN ORGANIC ANALYSIS. II. DETERMINATION OF AMINO ACIDS AND PEPTIDES. 20 Nov 57, 10p. (Summary omitted) 16 refs.
Order from SLA mi$1.80, ph$1.80 59-15420

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] (Czechoslovakia) 1957, v. 22, Feb, p. 230-235.

A simple method was developed for determining amino acids and peptides. It is based on conversion of copper from insoluble suspension of copper(II) phosphate into amino acid complexes, and complexometric determination of the copper liberated upon decomposition of the complexes. The copper complexes of some peptides were isolated, and their probable structure suggested on the basis of their analysis and a series of comparative experiments. (See also 59-15427)

Buděšínsky, B. and Vanickova, E.
COMPLEXOMETRY IN ORGANIC ANALYSIS. III. DETERMINATION OF QUATERNARY AMMONIUM SALTS. 21 Nov 57 [12]p. (2 figs. omitted) 23 refs.
Order from SLA mi$2.40, ph$3.30 59-15427

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] (Czechoslovakia) 1957, v. 22, p. 236-241.

A simple complexometric determination of quaternary ammonium salts was developed on the basis of formation of very slightly soluble complex cadmium iodides. (See also 59-15420)

Eberius, E. and Kowalski, W.
CONTRIBUTION TO THE DIRECT DETERMINATION OF COMBINED OXYGEN IN METALS AND METAL OXIDES. I. DETERMINATION OF ZINC OXIDE IN ZINC DUST AND ZINC ASHES. [1959]
Order from BISI £3 5s BISITS-1192

Trans. of Z[eitschrift für] Erz[bergbau] u[nd] Met[allhüttenwesen] (West Germany) 1954 [v. 7] June, p. 229-234.

Gottschalk, G. and Dehmel, P.
STATISTICS IN CHEMICAL ANALYSIS. I. THE DISCOVERY OF SYSTEMATIC AND GROSS ERRORS, AND THE SIGNIFICANCE OF RANDOM ERRORS IN GRAVIMETRIC AND TITRIMETRIC ANALYTICAL PROCEDURES. [1959] 17p. 5 refs.
Order from SLA mi$2.40, ph$3.30 59-15789

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (West Germany) 1957, v. 159 [no. 2] p. 81-94.

Langer, N. A. and Novikov, T. P.
A METHOD FOR THE RAPID ANALYSIS OF FLUX AN-348-A. [1959].
Order from BISIA 2 BISITS 1284

Trans. of Avtom[aticheskaya] Svarka (USSR) 1956 [v. 9] no. 5, p. 80-83.

Lauer, F. J.
THE DETERMINATION OF HARD WAXES IN WAX MIXTURES. [1959] 8p. (8 figs. omitted).
Order from SLA mi$1.80, ph$1.80 59-15527

Trans. of Fette Seifen Anstrichmittel (West Germany) 1953, v. 55, no. 3, p. 170-173.

Meulen, J. H. van der
BROMO-IODOMETRIC STUDIES. PART V. [1959] 8p.
Order from ATS $11.50 ATS-25L31DU

Trans. of Chem[isch] Weekblad (Netherlands) 1931, v. 28, no. 5, p. 82-86.

Meulen, J. H. van der
QUANTITATIVE DETERMINATION OF "AKTIVIN" AND HYPOCHLORITE IN THE SAME SOLUTION. [1959] 7p.
Order from ATS $9.75 ATS-87L31DU

Trans. of Chem[isch] Weekblad (Netherlands) 1934, v. 31, p. 558-561.

Rzhekhin, V. P. and Pogonkina, N. I.
THE DETERMINATION OF THE FATTY ACID COMPOSITION OF VEGETABLE OILS FROM THE IODINE AND THIOCYANATE NUMBERS (K Voprosu Opredeleniya Zhirokislotnogo Sostava Rastitel'nykh Masel po Iodnomu i Rodianovomu Chislam). June 59 [10]p. 8 refs. R. T. S. no. 1044.
Order from LC or SLA mi$1.80, ph$1.80 59-18128

Trans. of Masloboyno-Zhirovaya Promyshlennost' (USSR) 1958, v. 24, no. 8, p. 10-12.

The formulae given by the American Oil Chemists' Society, by the Deutsche Gesellschaft fllr Fettwissenschaft, and by standard Russian textbooks are applied to the analysis of several common vegetable oils. The German method is found to be the best, since it is based on new values of the thiocyanate numbers, and because it gives an indication of the fatty acid concentration in natural oils.

Schuler, H.
EMISSION SPECTROSCOPY OF ORGANIC SUBSTANCES BY MEANS OF ELECTRON IMPACT.. EXCITATION IN THE GLOW DISCHARGE. I (Uber die Emissionsspektroskopie Organischer Substanzen mit Hilfe der Elektronenstossanregung in der Glimmentladung. I). [1959] [11]p. (2 figs. omitted) 5 refs. Tr57-20.
Order from SLA mi$2.40, ph$3.30 59-10570

Trans. of Spectrochimica Acta (Gt. Brit.) 1950, v. 4, p. 85-92.

By use of a new type of a discharge tube (Phys. Z. 41: 381, 1940) in which the positive column is observed at low temperatures and with low excitation currents, it is possible to observe spectra of organic molecules instead of the usual glow discharge spectrum of molecular fragments. Similarities and differences between the emission and absorption spectra of various benzene derivatives are discussed. The spectra of organic compounds with one ring are described. A change in the quinone spectrum in the presence of phenol has been observed and is attributed to the presence of a hydrogen linkage. (See also 59-10592)

Schüler, H. and Reinebeck, L.
ON THE EMISSION SPECTROSCOPY OF ORGANIC SUBSTANCES BY MEANS OF ELECTRON IMPACT EXCITATION [IN THE GLOW DISCHARGE. II] (Über die Emissionsspektroskopie Organischer Subtanzen mit Hilfe der Elektronenstossangegung in der Glummentladung. II). [1959] [18]p. (4 figs. omitted) 25 refs. Tr57-96.
Order from SLA mi$2.40, ph$3.30 59-10592

Trans. of Spectrochimica Acta (Gt. Brit.) 1954, v. 6, p. 288-301.

Spectroscopic studies of about 200 different organic molecules were surveyed. Numerous new spectra have been reported which do not correspond to transitions between higher excited electronic states of the investigated molecules. They indicate that instead of a radiation there is a fragmentation of the excited molecules into large fragments. This appears to be a general phenomenon in the emission spectroscopy of polyatomic organic substances. Polyatomic fragments or free radicals may manifest themselves directly by their luminosity. This formation may lead to the synthesis of new substances which can be observed through their spectra. When excitation is made with high energies of definite magnitudes, new substances are formed, which could not have been anticipated from the nature of the initial substance. With lower energies the formation of toluene, benzene, etc. is observed in discharges through numerous benzene derivatives. With water vapor there is the possibility of a luminosity of the negative fragment ions (OH^-). In the case of benzaldehyde, reinforcement phenomena occur which make it possible to detect foreign substances which may be present only as traces. (See also 59-10570)

Takamoto, Susumu.
EDTA TITRATION WITH COBALT (II) SOLUTION, 1. TITRATION OF VARIOUS HEAVY METALS WITH THIOCYANIC ACID-ACETONE AS INDICATORS, 2. TITRATION OF VARIOUS RARE METALS, 3. Repts. 1-3 on Determination of heavy Metals by Means of EDTA (Disodium Ethylenediaminetetraacetate). [1958] 20p. 5 refs. Tr57-23.
Order from SLA mi$2.40, ph$3.30 59-10718

Trans. of Nihon Kagaku Zasshi (Japan) 1955, v. 76, no. 12, p. 1339-1345.

In order to find metal indicators acting on cobalt in the volumetric analysis method using EDTA, fifth-odd types of analytical reagents for cobalt were tested, but all except thiocyanic acid and acetone were unsuitable. Using these as the indicator, therefore, it was ascertained that determination of Fe (III), Cu (II), Ni, Co, Mn, Pb, Cd, Sb, Bi, rare earths, Ga (III), Tl (III), Zr, Th, etc., is possible on a semimicro scale when these are present along, by titrating the excess EDTA with $CoCl_2$ solution. Mixtures with Fe (III), Cu (II), Ni, and Co in various combinations can be determined for total quantities. Sn (II) and SN (IV) cannot be determined; Fe (II) and ammonium posed difficulties; and Mg, Sr, Ba, Cr (III) in excess, Ag, Cu (I), Hg (I), and Tl (I) in excess interfere.

Vrestal, J. and Kotrly, S.
COMPLEXOMETRIC TITRATIONS (CHELATOMETRY). XXIII. DETERMINATION OF LEAD AGAINST BRILLIANT CONGO BLUE IN UNBUFFERED MEDIUM (Komplexometrische Titrationen (Chelatometrie). XXIII). 20 Nov 57 [12]p. 12 refs.
Order from SLA mi$2.40, ph$3.30 59-15421

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] (Czechoslovakia) 1957, v. 22, Feb, p. 189-194.

The disazo dye Brilliant Congo Blue BFL can be used as a chelatometric indicator for determination of lead in neutral medium by ammonical complexon standard solution, permitting titration without the aid of buffer solutions. The absorption curve of the dye solution and its lead complex was measured. The color change in complexometric determination of lead was observed photometrically.

Zaitseva, G. N. and Tyuleneva, N. P.
QUANTITATIVE DETERMINATION OF AMINO ACIDS ON CHROMATOGRAMS BY MEANS OF THE FORMATION OF COPPER DERIVATIVES WITH NINHYDRIN. [1959] 7p.
Order from ATS $8.95 ATS-50L29R

Trans. of Lab[oratornoye] Delo' (USSR) 1958, v. 13, no. 3, p. 24-30.

Zhukhovitskiy, A. A., Zolotareva, O. V. and others.
A NEW METHOD OF CHROMATOGRAPHIC ANALYSIS. [1958] 7p. (2 figs. omitted) 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-10383

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1951, v. 77 [no. 3] p. 435-438.

A description and short theory are given of a method of incorporating thermal displacement into chromatographic analysis. This can be used for the analysis of mixtures of heavy and light hydrocarbons.

Inorganic Chemistry

Fomin, V. V. and Maiorova, E. P.
DETERMINATION OF STABILITY CONSTANTS OF $Th(NO_3)_x^{4-x}$ IONS BY MEANS OF TRIBUTYL PHOSPHATE EXTRACTION [AND] DETERMINATION OF STABILITY CONSTANTS OF $Th(NO_3)_j^{4-j}$ IONS. COMMUNICATION 2. EXPERIMENTS WITH MACROQUANTITIES OF THORIUM, tr. by S. Botcharsky. Sep 58 [20]p. A. E. R. E. Lib/Trans. 802, papers 1 and 2.
Order from LC or SLA mi$2.40, ph$3.30 59-10228

Trans. of Zhurnal Neorganicheskoy Khimii (USSR) 1956, v. 1, no. 8, p. 1703-1712 and no. 12, p. 2749-2752.

Determination with tributyl phosphate extraction: Nitrate solutions at an ionic strength of 2 were used. Thorium is extracted in tributyl phosphate(TBP) as $Th(NO_3)_4 \cdot 2TBP$. The thorium distribution coefficient is practically independant of the concentration of hydrogen ions. The equilibrium constant of the reaction in the complex formation of nitric acid with TBP is equal to 0.22±0.02, while the constant of the equilibrium reaction in the complex formation of thorium nitrate with TBP is equal to 36±2. The stability constants of the nitrate complex ions of thorium $Th(NO_3)^{+++}$, $Th(NO_3)_2^{++}$, $Th(NO_3)_3^{+}$ and $Th(NO_3)_4$ were computed and found to be equal correspondingly to 6±0.5; 13±1; 10±0.5; and 5.5±0.5. Determination with macro-quantities of thorium: The value of the stability constants of $Th(NO_3)_j^{4-j}$ ions and that of the reaction constant of the formation of the compound $Th(NO_3)_4 \cdot 2TBP$ were found in experiments with tracer thorium. With the ionic strength of the solution remaining constant, these permit the computation of the distribution coefficients in the experiments with weighable thorium contents.

Tananayev, I. V., Petushkova, S. M., and Shpinyeva, G. V.
THE PREPARATION OF AN ANHYDROUS LITHIUM IODIDE [O Polucheniy Bezvodnogo Yodistogo Litiya]. 14 Jan 58, 7p. 6 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15381

Trans. of Zhurnal Neorganicheskoy Khimii (USSR) 1958, v. 3, no. 5, p. 1071-1074.
Another translation is available from RIS $24.50 as RIS R 723, 17 Oct 58, 9p.

Various methods of preparing anhydrous LiI were tested, including reaction of lithium ethoxide and ethyllithium with ethyl iodide, reaction of Li metal with iodine dissolved in benezene or toluene, dehydration of $LiI \cdot 3H_2O$ in a stream of HI at 300°C, and fusion of the same salt in vacuo. None of these methods gave a satisfactory product. A method of preparing completely anhydrous LiI by heating the hydrate and then distilling in vacuo at 800-850°C and about 0.01 mm Hg is proposed.

Yamada, Noboru.
OXIDATION OF CARBON MONOXIDE BY SILVER CATALYSTS. II. STUDY OF POISONING OF SILVER CATALYST BY OXYGEN. [1958] [5] p. 5 refs. A. C. S. I. L. Trans. no. 962.
Order from SLA mi$1.80, ph$1.80 59-10213

Trans. of [Nihon Kagaku Zasshi] (Japan) 1954, v. 75 [no. 3] p. 309-311.

Experiments on the oxidation of carbon monoxide were compared using as catalysts silver oxide and silver subjected to a heat treatment in an atmospheric oxygen current. Results indicate that the different reaction rates obtained previously (Nihon Kagaku Zasshi 74: 326, 1953) show that there is a poisoning of the catalyst surface due to the irreversible adsorption of oxygen.

Organic Chemistry

CYANOHYDRINS FROM HYDROGEN CYANIDE AND CARBONYL COMPOUNDS. [8 May 59] 13p.
Order from RIS $22.00 RIS rept. 96889

Trans. of German patent application B 40 284 (12o, 11) DAS 1 014 094, filed 18 May 56, pub. 22 Aug 57, by Badische Anilin- und Soda-Fabrik, A. G., Ludwigshafen.

A process is described for producing cyanohydrins from hydrogen cyanide and carbonyl compounds in the presence of catalysts, characterized in that the reaction is effected in the gas or vapor phase. Acid catalysts, e.g., primary alkali or alkaline earth salts of polybasic acids, are preferentially used for the reaction of low members of the aldehyde series or of unsaturated carbonyl compounds with hydrogen cyanide. Basic catalysts, e.g. secondary alkali or alkaline earth salts of polybasic acids, or anion exchangers such as amino resins, are preferentially used as catalysts for the reaction of higher saturated aldehydes or saturated ketones with hydrogen cyanide. The reaction is carried out in the presence of secondary magnesium salts of polybasic acids, within a temperature range of 0 to 80° and preferably 30 to 60°C, the heat of reaction being properly dissipated. The temperature is maintained below the boiling point of the carbonyl compound by evaporating the latter through a stream of inert gas, which may be circulated. The gaseous or vaporous reaction mixture is passed over packings, and the reaction is catalyzed by introduction of small amounts of ammonia or gaseous amines.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1958, 1959, NO. 15 (Soviet Abstracts. Chemistry).
Order from OTS $1.00 each

Contents:
Section G. Organic Chemistry.

1958, no. 15, Abstracts 50193-50548, JPRS: 1637-N, 59-13567
1959, no. 4, Abstracts 11720-11958, JPRS: 1718-N, 59-13660

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Auwers, K. v. and Stuhlmann, H.
THE ISOMERISM SITUATION IN THE PYRAZOLE SERIES. VIII. 3(5)-METHYL-5(3)-PHENYL-PYRAZOLE. [1959] [11]p. 17 refs.
Order from SLA mi$2.40, ph$3.30 59-15430

Trans. of Chem[ische] Berichte (Germany) 1926, v. 59 B, p. 1043-1048.

[Bengen, F. and Schlenk, W., Jr.]
NEWER ADDITIVE COMPOUNDS OF UREA. [1959] 3p. 1 ref.
Order from SLA mi$1.80, ph$1.80 59-15887

Trans. of Experientia (Switzerland) [1949] v. 5, no. 5, p. 200.

Combes, A. and Combes, C.
ACTION OF DIAMINES. [1959] 4p.
Order from SLA mi$1.80, ph$1.80 59-15091

Trans. of Societé Chimique [de France]. Bulletin 1892, v. 7, no. 3, p. 791-793.

Fendler, H. G. and Stuart, H. A.
THE DETERMINATION OF MOLECULAR WEIGHTS IN POLYAMIDES BY MEASUREMENTS OF LIGHT SCATTERING. [1959] 24p. 14 refs.
Order from SLA mi$2.70, ph$4.80 59-15257

Trans. of Makromolekulare Chemie (Switzerland) 1957, v. 25 [no. 3] p. 159-175.

Dust-free solutions of Perlon (Nylon 6) in formic acid with varied water content obtained by repeated filtering were tested for light-scattering intensity and unsymmetry. These same measurements were also made for solutions in 99.4% formic acid with different salt additions and for solutions in formic acid to which was added butanone in varying concentration. A molecular weight of 18×10^3 was obtained.

Freudenberg, K.
CONTRIBUTIONS TO THE CHEMISTRY OF STARCH AND THE CYCLOGLUCANS (SCHARDINGER DEXTRINS). [1958] 7p. 37 refs.
Order from SLA mi$1.80, ph$1.80 59-10141

Trans. of Angew[andte] Chem[ie] (West Germany) 1957, v. 69 [no. 12] p. 419-422.

The history of the chemistry of the Schardinger dextrins (cycloamyloses) is reviewed with emphasis placed on their constitution.

Grandberg, I. I. and Kost, A. N.
REACTION OF HYDRAZINE DERIVATIVE. IV. NEW SYNTHESIS OF BENZYLHYDRAZINE.
12 May 59, 3p. 15 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15900

Trans. of Moscow U. Vestnik. Seri[ya] Fiz[iko]-mat[ematicheskikh] i Yestestven[nykh] Nauk (USSR) 1955, v. 10 [no. 12] p. 119-120.

Grinev, A. N., Yermakova, V. N., and Terent'yev, A. P.
SYNTHESES OF 1-BENZYL-2-METHYL-5-METHOXYTRYPTAMINE. [1959] 6p. 12 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15906

Trans. of Akademiya Nauk SSSR. Doklady [1958] v. 121, no. 5, p. 862-864.

Hantzsch, A. and Popp, G.
ALKYLATED THIAZOLES FROM THIOAMIDES [AND] THIAZOLES FROM AMINOTHIAZOLES.
Repts. 5 and 6 on Investigations on Azoles. [1959] 24p. 9 refs.
Order from SLA mi$2.70, ph$4.80 59-15870

Trans. of [Justus Liebigs] Ann[alen der Chemie] (Germany) 1889, v. 250, p. 257-280.

Hantzsch, A., Arapides, L. and Traumann, V.
GENERAL OBSERVATIONS ON AZOLES; RE-ARRANGEMENT OF THIOCYANOGEN KETONES INTO HYDROXYTHIAZOLES AND REDUCTION OF THE LATTER TO THIAZOLES; CONTRIBUTION TO THE KNOWLEDGE OF THE SO-CALLED "MUSTARD OIL ACETIC ACID"; ON AMINOTHIAZOLES AND THEIR ISOMERS. Repts. 1-4 on Investigations on Azoles. [1959] 52p. 34 refs.
Order from SLA mi$3.60, ph$9.30 59-15871

Trans. of [Justus Liebigs] Ann[alen der Chemie] (Germany) 1888, v. 249, p. 1-53.

Krüger.
PREPARATION OF CELLULOSE ACETATE AND HYDROLYSIS TO SECONDARY ACETATE.
Abstract of article "Cellulose Acetate and other Organic Esters of Cellulose." [1958] 9p. 39 refs.
Order from SLA mi$1.80, ph$1.80 59-10715

Trans. of Russa (France) 1934, v. 9, p. 419ff.

Lossév, I. P., Fedotova, O. Ya., and Trostyanskaya, E. B.
POLYMERIZATION OF ARYLVINYL ETHERS. [1959] 8p.
Order from LC or SLA mi$1.80, ph$1.80 59-15838

Trans. of [Zhurnal Obshchey Khimii] (USSR) 1945, v. 15, no. 4/5, p. 353-35[7].

The polymerization scheme of phenyl vinyl ether in the presence of AlCl, and BF, is determined. The difference between alkylvinyl and phenylvinyl ethers is shown by the latter's forming solid polymers under known conditions. Solutions of solid and viscous adhesive polymers of this ether give when dried a solid thermoplastic film having good water resistance. Polyphenyl ether polymerizes with methyl methacrylate and not with styrene. Copolymers of phenyl vinyl ethers with maleic anhydride are of interest for the preparation of lacquers.

Natalis, P.
STUDY OF SOME CIS AND TRANS 1, 2-DIALKYLCYCLOPENTANES BY MASS SPECTROMETRY (Étude de Quelques 1, 2-Dialkylcyclopentanes Cis et Trans par Spectrometrie de Masse). [1958] [17]p. 2 refs. Tr57-69.
Order from SLA mi$2.40, ph$3.30 59-10585

Trans. of Soc[iété] Chim[ique de] Belg[ique]. Bull[etin] 1957, v. 66 [no. 1/2] p. 5-25.

Natta, G[iulio], Mazzanti, G[iorgio] and Corradini, P[aolo].
STEREOSPECIFIC POLYMERIZATION OF ACETYLENE. [1959] [15]p. 11 refs.
Order from SLA mi$2.40, ph$3.30 59-15708

Trans. of Accad[emia] Naz[ionale dei] Lincei. Classe di Sci[enze] Fiz[iche], Mat[ematiche] e Nat[urali]. Rend[iconti] (Italy) 1958, ser. 8, v. 25, no. 1/2, p. 3-12.

Acetylene was polymerized with (1) Ziegler catalysts, (2) catalysts highly stereospecific in the polymerization of α-olefins, and (3) a catalyst prepared from titanium alcoholates. The yields in (3) were uniformly low (about 2g/g catalyst) and the type of polymer did not vary. Polyacetylene rapidly absorbs oxygen and adds chlorine even at room temperature. A powder X-ray spectra indicated a trans configuration.

Nishioka, A.
PHYSICAL PROPERTIES OF FLUOROCARBON RESINS. PART I. [1959] 12p.
Order from ATS $15.65 ATS-62L30J

Trans. of Oyô Butsuri (Japan) 1956, v. 25, no. 10, p. 389-395.

Nishioka, A.
PHYSICAL PROPERTIES OF FLUOROCARBON RESINS. PART II. [1959] 9p.
Order from ATS $12.70 ATS-63L30J

Trans. of Oyô Butsuri (Japan) 1956, v. 25, no. 12, p. 475-479.

[Ochiai, Kiji] and Yanai, Koji.
POLARIZATION OF AROMATIC RING-LIKE HETERO-RINGS (III). POLARIZATION OF PYRIMIDINE RINGS. [1959] 19p.
Order from SLA mi$2.40, ph$3.30 59-10726

Trans. of [Yakugaku Zasshi] (Japan) 1939, v. 59, p. 18-28.

Oiwa, Masayoshi and Kawai, Wazaburo.
ON THE POLYMERIZATION VELOCITY OF TRIALLYL CYANURATE (REPT. 4). [1959] 14p. 9 refs.
Order from SLA mi$2.40, ph$3.30 59-15516

Trans. of Nihon Kagaku Zasshi (Japan) 1955, v. 76, no. 6, p. 687-691.

Triallyl cyanurate was polymerized in benzene solution with benzoyl peroxide at 80°, 90°, and 99°C. These reactions were examined to find α, the probability of reaction growth, and to obtain the relationship between the reaction time and the rate of the reaction. Results contradicted previous theory (Nihon Kagaku Zasshi 76: 684, 1955) and led to the consideration of degrative chain-transfer, which removed the discrepancy.

Oppenauer, R. V. and Oberrauch, H.
A NEW OXIDANT: TERTIARY BUTYL CHROMATE. [1959] 20p. 4 refs.
Order from SLA mi$2.40, ph$3.30 59-15941

Trans. of Asoc[iación] Quim[ica Argentina]. Anales, 1949, v. 37 [no. 186] p. 246-262.

The oxidizing characteristics of tertiary butyl chromate are described. The oxidation stops in most cases at the carbonyl phase, which makes it possible, for example, to obtain aldehydes from primary alcohols, as well as unsaturated ketones from unsaturated hydrocarbons, frequently with excellent yields.

Ostromislenskiy, I. I. and Klebasinskiy, S. S.
ON THE CONDENSATION OF A MIXTURE OF ACETIC ALDEHYDE AND ETHYL ALCOHOL INTO ERYTHRENE. [1958] 19p. 8 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-10680

Trans. of [Zhurnal Obshchey Khimii] (USSR) 1915, v. 47, p. 1509-1528.

[Pajaro, Gastone]
SYNTHESIS OF A FEW ALUMINUM-ALKYL COMPOUNDS LABELED WITH C^{14}. [1959] 9p. 14 refs.
Order from SLA mi$2.40, ph$3.30 59-15006

Trans. of Ann[ali di] Chim[ica] (Italy) 1958, v. 48 [no. 2] p. 193-197.

The preparation of organo-aluminum compounds containing C^{14} is described. The preparation of $Al(C_2H_5)_3$ is carried out in two different manners. In the first case, one starts from $LiAlH_4$ and ethylene labeled with C^{14} followed by treatment of $LiAl(C_2H_5)_3$ in hexane. In the second case the $Al(C_2H_5)_3$ is prepared by exchange from $Al(C_4H_9)_3$ and ethylene in the presence of colloidal Ni. There is furthermore described the preparation of $Al(C_2H_5)_2Cl$ by treatment of $Al(C_2H_5)_3$ with anhydrous $AlCl_3$.

Pesson, Marcel.
THE SYNTHETIC PTERINES. IV. REPORT ON A CASE OF ISOMERISM OF THE DIARYL-8, 9 DIHYDROPTERIDINES. [1959] [20]p.
Order from SLA mi$2.40, ph$3.30 59-15731

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1948, nos. 9/10, p. 963-968.

Rybnikář, František.
VISCOSITY OF POLYAMIDES. [1959] 14p. (9 figs. omitted) 14 refs.
Order from SLA mi$2.40, ph$3.30 59-15921

Trans. of Chem[ické Listy] (Czechoslovakia) 1955, v. 49, p. 1442-1447.

The method of fractionation of polyamides by condensation into the liquid state is described. The validity of Huggins' equation (Ind. Eng. Chem. 35:980, 1943) was tested on fractionated and unfractionated samples of poly-6-caprolactam (silon), poly-C-methylcaprolactam, copolymers of 6-caprolactam with C-methylcaprolactam, and the polyamide of adipic acid and hexamethylenediamine (Igamid A). A constant, $K = 0.335$, is proposed for $[\eta] = 10$ or less in tri-creosol. For characterizing the molecular weight of polyamides, instead of the currently employed determination of the degree of polymerization P, the inner viscosity $[\eta]$ is suggested, which may be computed on the basis of one measurement of viscosity from the relationship $[\eta] = (\sqrt{1 + 4K\eta_{sp}} - 1)/2Kc$, where η_{sp} is the specific viscosity and c is the concentration in g/100 ml.

Schenek, Rudolf and Finken, H.
MALONITRILE AND MALONITRILE CONDENSATION: II. [1959] 13p. 7 refs.
Order from SLA mi$2.40, ph$3.30 59-15937

Trans. of [Justus Liebigs] Annalen der Chemie (Germany) 1928, v. 462, p. 267-277.

Schmidlin, J., Anner, G. and others.
SYNTHESES IN THE ALDOSTERONE SERIES I. TOTAL SYNTHESIS OF RACEMIC ALDOSTERONE. Communication 132 on Steroids. 9 Dec 55, 13p. 29 refs.
Order from SLA mi$2.40, ph$3.30 59-15377

Trans. of Experientia (Switzerland) 1955, v. 11, no. 9, p. 365-368.

The racemate (XXIV) corresponding to the active steroid hormone, aldosterone, from the adrenals, was totally synthesized from d,l-Δ^{8a}-4bβ-methyl-7-ethylene-dioxy-4aα, 10aβ-dodecahydrophenanthrene-4β-ol-1-one, in more than 20 steps.

Schwarzenbach, G. and Baur, R.
METAL COMPLEXES WITH POLYAMINES: WITH CIS- AND TRANS-1,2-DIAMINOCYCLOHEXANE. [1959] 12p. 12 refs.
Order from SLA mi$2.40, ph$3.30 59-15745

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1956, v. 39 [no. 16] p. 722-728.

pH measurements were carried out in equilibrium mixtures which contained an excess of protonized diamine HD^+ and H_2D^{++}. Co^{++}, Ni^{++}, Cu^{++}, Zn^{++} and Cd^{++} were also investigated. Mixtures of the heavy metal salts and the di-hydrochloride of the diamines were titrated with NaOH in concentration of 1:5 at 20° and a constantly maintained ion strength (with KCl) $\mu = 0.1$.

Shostakovsky, M. F. and Kochkin, D. A.
INVESTIGATIONS IN THE FIELD OF THE SYNTHESIS AND TRANSFORMATIONS OF VINYL SILICON COMPOUNDS. SYNTHESIS OF VINYLALKYLDICHLOROSILANES BY REACTION OF ALKYLDICHLOROSILANES WITH ACETYLENE. [1959] 5p. 6 refs.
Order from CCT $21.00 CCT-165-TT

Trans. of *[Akademiya Nauk SSSR. Doklady] 1956, v. 109, no. 1, p. 113-116.

An investigation was undertaken to synthesize vinyl silicon compounds, a new class of substances and source materials for the preparation of various polymeric materials, of the structure $CH_2{=}CHSiR_3$, where R is halide, alkyl, or aryl. Synthesis of these substances is based on the reaction of acetylene and hydrogen containing alkyl or aryl silanes or their halogen derivatives. The reaction proceeds according to $CH{\equiv}CH + HSiR_3 \rightarrow CH_2{=}CHSiR_3$. The synthesis of vinylalkyldichlorosilanes was carried out using methyldichlorosilanes and ethyldichlorosilanes. The reaction proceeds according to

$$\underset{R}{CH{\equiv}CH} + HSiCl_2 \rightarrow \underset{R}{CH_2{=}CHSiCl_2},$$

where R is CH_3 or C_2H_5. These compounds can also be prepared by means of organomagnesium and organolithium compounds. The vinylation of methyldichlorosilane in the presence of palladium on carbon and the vienylation of ethyldichlorosilane in the presence of platinum on carbon and palladium on aluminum oxide is described.

Talalayeva, T. V. and Kocheshkov, K. A.
CRYSTALLINE LITHIUM ORGANIC COMPOUNDS. ETHYL LITHIUM. [1959] 8p. 14 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15375

Trans. of *[Zhurnal Obshchey Khimii] (USSR) 1953, v. 23 [no. 3] p. 392-396.

Pure crystalline ethyl lithium was prepared by the reaction of lithium with ethyl bromide in isopentene. The subsequent separation from lithium bromide was effected through the different solubilities in benzene and isopentene (or hexane).

Überreiter, Kurt and Krull, Wolfgang.
OSMOTIC MOLECULAR WEIGHT DETERMINATIONS OF STYRENE-ACENAPHTHYLENE COPOLYMERS. [1959] 20p. (5 figs. omitted) 11 refs.
Order from SLA mi$2.40, ph$3.30 59-15917

Trans. from [Makromolekulare Chemie (Switzerland) 1957, v. 24, no. 1].

The molecular weights of copolymers made by thermal polymerization of styrene and acenaphthylene at 90°C are determined by osmosis. Experiments controlling the permeability of membranes and a treatment for the production of membranes of equal permeability are described.

Yamada, Shun'ichi, Mizoguchi, Tomishige, and Ayata, Akire.
STUDIES ON 1,2,3-TRIAZOLE DERIVATIVES. (1) ACTION OF ACID AND ALKALI ON 8-AZAGUANINE. [1959] 5p. 7 refs.
Order from SLA mi$1.80, ph$1.80 59-15770

Trans. of [Yakugaku Zasshi] (Japan) 1957, v. 77 [no. 4] p. 441-442.

8-Azaguanine (5-amino-7-hydroxy-1-H-v-triazolo(d)-pyrimidine) was heated with 6N HCl in a sealed tube at 170° to 190°C for two hours; it decomposed completely except for the formation of NH_4Cl. Upon the same treatment with NaOH it decomposed to NH_3, CO_2, and 4-amino-1,2,3-triazole.

Zinner, G.
ORGANIC DERIVATIVES OF THE PEROXY CARBONIC ACID AND PEROXY-SULFUROUS ACID. 24 June 59 [3]p. 6 refs. PR-TR-120.
Order from SLA mi$1.80, ph$1.80 59-15886

Trans. of Angewandte Chemie (West Germany) 1957, v. 69 [no. 14] p. 480.

Physical Chemistry

ELECTRIC-ARC DEVICE WITH SINGLE-PHASE OR POLY-PHASE CURRENT FOR THE PRODUCTION OF A GAS STREAM WITH A HIGH ENERGY DENSITY. [1959] 7p.
Order from ATS $11.00 ATS-92L30F

Trans. of Belgian Patent no. 569481, Knapsack-Griesheim, A. G., filed 9 Aug 57, granted 14 Aug 58.

*KOLLOIDNYY ZHURNAL (USSR) 1958, V. 21, NO. 1 P. 3-135 (Colloid Journal). [1959] [20]p. SOV-69-21-1-(1-21)/21.
Order from OTS $0.60, $3.50/year PB 141 064T-6
Foreign $0.85, $5.00/year

Consists of abstracts in English.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1959, NO. 4. (Soviet Abstracts. Chemistry). 11 June 59, 21p. JPRS: 1636-N.
Order from OTS $1.00 59-13566

Contents:
Section B. Physical Chemistry. Abstracts 10739-11170.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

ZHURNAL FIZICHESKOY KHIMII (USSR) 1958, 1959 (Journal of Physical Chemistry).
Order from OTS $1.10, $6.00/6 mo.
Foreign $1.35, $7.50/6 mo.

1958, v. 32, no. 12, p. 2657 - 2849, PB 141 072T-13
1959, v. 33, no. 1, p. 3-237, PB 141 072T-14

Consists of abstracts in English.

Bagotskaya, I. A.
INVESTIGATION OF THE INFLUENCE OF DIFFUSED HYDROGEN ON THE POTENTIAL OF IRON IN ALKALI SOLUTIONS. [1959] 5p. 5 refs.
Order from CCT $21.00 CCT-164-TT

Trans. of [Akademiya Nauk SSSR. Doklady] 1956, v. 107, no. 6, p. 843-846.

The present work investigates the influence of diffused atomic hydrogen on the iron potential in a 5 N NaOH solution. The experiments were carried out mainly on Armco Iron. The iron membrane, annealed in hydrogen at 600°C and degasified at 800°, was clamped in a flat slide, cemented with vacuum paste between two containers. A 5 N NaOH solution saturated with hydrogen was introduced into the diffusion vessel, filled with hydrogen. A 1 N HCl or 1 N H_2SO_4 solution was introduced into the polarization cell, and the polarization side of the membrane was subjected to cathode polarization by a current of 0.1 A/cm^2. In order to accelerate the initiation of diffusion recourse was had to anode activation of the polarization side, consisting of brief interruption of cathode polarization on the polarization side and application to its anode polarization of a current of 0.03 to 0.1 A/cm^2 over a period of a few seconds, thus producing a reduction in the hydrogen over-voltage and providing quick initiation of diffusion.

Baudisch, Oskar.
MAGNETIC INVESTIGATIONS OF THE OXIDATION MECHANISM. [1959] 11p. 25 refs.
Order from SLA mi$2.40, ph$3.30 59-15794

Trans. of Chem[ische] Ber[ichte] (Germany) 1935, v. 68 [no. 5] p. 769-775.

Buchanan, G. H. and Barsky, George.
A PHOTOCHEMICAL COLOR REACTION OF CYANAMIDE AND FERROCYANIDE. [1959] 8p. 12 refs.
Order from SLA mi$1.80, ph$1.80 59-15787

Trans. of Angew[andte] Chem[ie] (Germany) [1931] v. 44, no. 21, p. 383-385.

The reversible photo-chemical color reaction of alkaline solutions containing ferrocyanide and cyanamide, which was first observed in the cyanide lixiviation for extracting gold and silver, is attributed to a compound

$$[Fe(CN)_5H_2CN_2]'''$$

which is produced through the interaction of the photochemical equilibrium

$$[Fe(CN)_6]'''' \rightleftharpoons [Fe(CN)_5]''' + CN'$$

and the equilibrium

$$[Fe(CN)_5]''' + H_2CN_2 \rightleftharpoons [Fe(CN)_5H_2CN_2]'''$$

Dumanskiy, A. B. and Nekryach, E. F.
HEAT OF WETTING AND HYGROSCOPICITY OF SOME NATURAL HIGH-POLYMERS (Teplota Smachivaniya i Gidrofil'nost' Nekotorykh Prirodnykh Vysokopolimerov) tr. by E. Feigl. 1956 [3]p. 6 refs. Trans. no. 2965.
Order from LC or SLA mi$1.80, ph$1.80 59-15041

Trans. of *Kolloidnyy Zhurnal (USSR) 1955, v. 17, no. 3, p. 171-172.

The hygroscopicity of starch, agar-agar and various types of flour was determined by the difference of the specific gravities of these substances measured in water and benzene.

Ewers, J.
OLEFINE- AND BENZOLE FORMATION IN COKE OVENS. [1959].
Order from BISI 3,15s BISITS 1247

Trans. of Brennstoff-Chemie (West Germany) 1955 [v. 36] 9 Feb, p. 33-37.

Gomel'skiy, K. Z.
THE ENTHALPY OF CORUNDUM IN THE TEMPERATURE RANGE FROM 100 TO 900°C [Ental'piya Korunda v Intervale Temperatur at 100 do 900°C]. [1959] 8p. 10 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15788

Trans. of Zhurn[al] Fiz[icheskoy] Khim[ii] (USSR) 1958 [v. 32] no. 8, p. 1859-1862.

The enthalpy and heat capacity of corundum was determined over the temperature range 100° to 900°C. The results of the measurements confirm that it is possible to use corundum as a standard substance for high temperature calorimetry.

Hahn, W. and Müller, W.
REDUCTION OF POLYVINYL CHLORIDE WITH LITHIUM ALUMINUM HYDRIDE. 30 Nov 55, 3p. 5 refs.
Order from SLA mi$1.80, ph$1.80 59-15946

Trans. of [Makromolekulare Chemie (Switzerland) 1955, v. 16, no. 1, p. 71-73].

The present communication constitutes a bried report on reduction experiments with lithium aluminum hydride applied to different polyvinyl chlorides.

Kavtaradze, N. N.
THE HYDROGEN ADSORPTION PROPERTIES OF METALS AS A FUNCTION OF THEIR POSITION IN THE MENDELEYEV PERIODIC SYSTEM OF ELEMENTS (Zavisimost' Adsorbtsionnykh Svoistv Metallov po Otnosheniyu k Vodorodu ot ikh Polozhenya v Periodicheskoi Sisteme Elementov D. I. Mendeleyeva) tr. by Marcel I. Weinreich. 9 Mar 59, 8p. (1 table omitted).
Order from LC orSLA mi$1.80, ph$1.80 SCL-tr-234

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1958, v. 32, no. 6, p. 1214-1217.

The adsorption properties of metals in relation to H_2 are in periodic dependence on their positions in the Mendeleev table. On the basis of this periodic dependence the probable calories of the atomic chemisorption of hydrogen were calculated for Mn, Co, Re, Os, and Ir. There is a connection between the maximum of the strength of the Me-H bond and the abrupt change in the volumetric properties of metals during a transition from the series 1 through 5 to the series 6 through 10. Similar dependencies are also found for ethylene, olefin, CO, and N.

Kazantsev, V. A.
INVESTIGATION OF THE K_β GROUP OF THE X-RAY SPECTRUM OF IRON AND CHROMIUM IN THE ALPHA AND SIGMA PHASES OF THE IRON-CHROMIUM SYSTEM. [1959].
Order from BISI£2 BISITS 1266

Trans. of Akad[emiya] Nauk SSSR. Dok[lady] 1955, v. 101, no. 3, p. 477-478.

Kleymenov, N. A. and Nalbandyan, A. B.
STUDY OF THE LOW-TEMPERATURE OXIDATION OF METHANE, WHICH IS INITIATED BY OXYGEN ATOMS WHICH HAVE BEEN FORMED AT THE THERMAL DECOMPOSITION OF OZONE. [1958] [8]p. 13 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-10175

Trans. of Akad[emiya] Nauk [SSSR]. Dokl[ady] 1958, v. 122, no. 3, p. 420-423.

An experimental investigation was made of the dependence of the yields of HCHO and CH_3OO, in the oxidation of CH_4 with ozonized O_2, on the composition of the mixture, the concentration of O_3, and the time in contact. Aerated CH_4, purified from CO_2 and unsaturated carbons, was used in an oxygen stream. The peroxide increased linearly with CH_4 concentration. Results agree with those obtained previously for the photochemical oxidation of CH_4 in the same (150° to 180°C) range (Zhur. Fiz. Khim. 22: 1443, 1948 and Akad. Nauk. SSSR, Doklady 66: 413, 1949; 67: 499, 1949; 86: 589, 1952; and 89: 125, 1953), indicating that the mechanisms are the same.

Koch, Lydie.
DEPOSIT OF URANIUM DIOXIDE ON ALUMINUM BY ELECTROLYSIS, tr. by Jane Gurney and Frances L. Ball. [1958] 3p.
Order from SLA mi$1.80, ph$1.80 AEC-tr-2701

Trans. of Journal of Nuclear Energy (Gt. Brit.) 1955, v. 2, no. 2, p. 110-111.

A method is described for the preparation of UO_2 layers strongly adherent to large areas of aluminum sheet. The thickness of the deposits may reach 3 mg./sq cm.

Kootz, T.
NITROGEN ABSORPTION OF IRON. [1959].
Order from BISI£2 5s BISITS 1254

Trans. of Stahl u[nd] Eisen (West Germany) 1959 [v. 79] 5 Feb, p. 135-137.

Krause, Alfons and Poszwiński, Przesaw.
THE CATALYTIC PROPERTIES OF URANIUM OXIDES. [1959] 9p. 18 refs.
Order from CCT $35.00 CCT-995-TT

Trans. of Roczniki Chemii (Poland) 1956, v. 30, no. 1, p. 29-38.

Experiments are described on uranium oxides as catalysts in redox systems at moderate temperatures (20° - 40°). The characteristics of individual oxides of uranium as regards catalysis and general information about the oxides and hydroxides of this metal are presented.

Legat, Maurice.
VARIOUS ORTHOBARIC AZEOTROPES. [1959] 1p. (1 table omitted).
Order from SLA mi$1.80, ph$1.80 59-15763

Trans. of [Academie des Sciences, Paris.] Compt[es] Rend[us] (France) 1946, v. 222, p. 733-734.

Explanatory material is presented for a table (not included) of Azeotropes, classed by functions, from acid to halogenated oxide.

Lifshits, E. M. and Andronikashvili, E. L.
A SUPPLEMENT TO HELIUM. [1959].
Order from CB $7.50

Trans. of two supplementary chapters to Russian translation of mono. Helium, pub. 1949.

The first chapter is a concise resume of the Landau theory of superfluidity (Quantization of the motion of a liquid; Superfluidity of Helium II; Macroscopic hydrodynamics of Helium II). The second chapter reports in considerable detail the experimental work conducted by Peter Kapitsa and E. L. Andronikashvili in this field (Motion of Helium II due to the influx of heat; The two forms of motion in Helium II; Viscosity of the normal component; Reversibility of hydrothermal processes and the thermo-mechanical effect; Critical velocities; Heat transport in slits and capillaries; Heat transfer in free Helium II; Second sound; Films; Impurities).

Makolkin, I. A.
THE OXIDATION OF MAGNESIUM AND ITS ALLOYS AT HIGH TEMPERATURES. [1959] 11p. 4 refs.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-1596

Trans. of *Zhurnal Prikladnoy Khimii (USSR) 1951, v. 24, no. 5, p. 460-470.

The processes of oxidation of magnesium, aluminum, zinc and magnesium alloys were examined in atmospheric oxygen at high temperatures, and those of magnesium alloys in nitrogen, carbon dioxide and sulphur dioxide. Aluminum and zinc are oxidized in atmospheric oxygen according to a parabolic law; and the oxidation of magnesium alloys in N_2, CO_2 and SO_2 proceeds analogously. On the other hand, the oxidation of magnesium and its alloys in atmospheric oxygen has a linear character. An increase of the aluminum content in magnesium alloys increases their rate of oxidation in atmospheric oxygen, nitrogen, CO_2 and SO_2. The mechanical properties of magnesium alloys are improved by treatment with CO_2 and SO_2. This takes place due to the formation by carbonates and sulphates of a protective film on the surface of the alloy. Hence, hot working (sic) of magnesium alloys must be done in an atmosphere of N_2, CO_2 or SO_2. Hot working of magnesium alloys in a protective gas, excludes the possibility of burning the objects being worked.

Meyer, Kurt and Ulbricht, Helmut.
THE FORMATION OF DIETHYL-p-PHENYLENE-DIAMINE SULFONIC ACID IN THE OXIDATION OF SULFITE-CONTAINING DEVELOPERS. [1958] 6p. 6 refs.
Order from SLA mi$1.80, ph$1.80 59-10473

Trans. of Z[eitschrift für] Wiss[enschaftliche] Phot[ographie, Photophysik und Photochemie] (East Germany) 1950, v. 45, no. 10-12, p. 222-226.

Mikhaylov, G. P. and Sazhin, B. I.
INVESTIGATION OF THE DIELECTRIC POLARIZATION AND LOSSES IN POLYTRIFLUOROCHLOROETHYLENE (Issledovaniye Dielektricheskoi Polyarizatsiy i Poter' Politriftorkhloretilena). Aug 57, [9]p. 13 refs. C. T. S. no. 346.
Order from LC or SLA mi$1.80, ph$1.80 59-14174

Trans. of *Zhurnal Tekhnicheskoy Fiziki (USSR) 1956, v. 26, no. 8, p. 1723-1729.

Two kinds of the relaxation-type dielectric losses and of loss in electrical conductivity were detected when investigating ϵ and tan δ of polytrifluorochloroethylene (F-3) at frequencies 50 to 10^7 c/s and temperatures from -100° to +230°C. Both kinds of relaxation polarization are caused by the polarity of the molecule of the polymer and are fundamentally related to processes in the amorphous regions. This is confirmed by the results of studies on the mechanical properties of F-3. An abrupt decrease of ϵ and tan δ is observed at the melting point of trifluorochloroethylene. The hysteresis phenomena on the curves ϵ and tan $\delta = f(t)$ in the fusion range are caused by the delayed crystallization of the polymer from the melt.

Naeser, G. and Scholz, W.
NITROGEN ABSORPTION DURING AIR-REFINING. [1959].
Order from BISI 3 10s BISITS 1255

Trans. of Stahl u[nd] Eisen (West Germany) 1959 [v. 79] 5 Feb, p. 137-141.

Patat, F. and Sinn, Hj.
THE LOW PRESSURE POLYMERIZATION OF α-OLEFINS. I. COMPLEX POLYMERIZATION. [1959] 11p. 29 refs.
Order from SLA mi$2.40, ph$3.30 59-15914

Trans. of [Angewandte Chemie (West Germany) 1958, v. 70, no. 16, p. 496-500].

Peter, W. and Matz, W.
THE TRANSFORMATION CHARACTERISTICS OF 12-14% CR STEELS. [1959].
Order from BISI 9 10s BISITS 1197

Trans. of Arch[iv für das] Eisenhütt[enwesen] (West Germany) 1957 [v. 28, no. 12] p. 807-823.

Pshezhetskiy, S. Ya. and Dmitriyev, M. T.
RELATION BETWEEN THE ENERGY YIELD AND THE KINETICS OF RADIATION-CHEMICAL REACTION (Svyaz' Mezhdu Energeticheskim Vykhodom i Kinetikoi Radiatsionno-Khimicheskoi Reaktsii) tr. by A. Pingell. 1959 [7]p. 2 refs. N R L Trans. no 727.
Order from OTS $0.50 59-21010

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1958, v. 32, no. 12, p. 2686-2689.

The relation between the energy yield and the kinetics of radiation-chemical reactions was examined theoretically for the basic types of kinetics and for different conditions under which the process is carried out. The energy yield of radiation-chemical reaction is a function of its kinetics; this determines the dependence of the yield on the length of exposure to radiation. These dependencies differ essentially for various types of kinetics and conditions under which the process is carried out.

Reitlinger, S. A.
GAS-PERMEABILITY AND MICROSTRUCTURE OF HIGHPOLYMERIC COMPOUNDS. [1959] 6p. (2 tables 4 equations omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-15848

Partial trans. (p. 420-423) of Zhurnal Obshchey Khimii (USSR) 1944, v. 14, no. 6, p. 420-[427].

Schenck, Günther O.
PHOTOCHEMICAL REACTIONS. II. THE UNSENSITIZED AND PHOTOSENSITIZED AUTOXIDATION OF FURANS. 2 Apr 59, 49p. 20 refs. (10 refs. omitted)
Order from SLA mi$3.30, ph$7.80 59-15908

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1953, v. 584 [no. 2/3] p. 156-176.

Tatiyevskaya, Ye. P.
THE INFLUENCE OF WATER VAPOR ON THE RATE OF REDUCTION OF MAGNETITE AND HEMATITE BY CARBON MONOXIDE. [1959] [10]p. 18 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15408

Trans. of Zhur[nal] F[izicheskoy] Khim[ii] (USSR) 1940, v. 14, p. 349-356.

The influence of water vapor on the rate of reduction of iron oxides by CO both in the initial stages of the reduction and after preliminary reduction was investigated at temperatures of 500 and 900°C, in the pressure range for the gas phase from 0.3 to 0.01 mm Hg. Experimental data and calculations show that in the reducing zone there occurs rapidly (possibly up to equilibrium) the water gas reaction under the catalytic influence of the iron oxides with the result that in the gas phase there remains an insignificant per cent of H_2O and the complex gas system $CO-CO_2-H_2-H_2O$ can be considered as the system $CO-CO_2$ without much error. Therefore, the inhibition of the rate of reduction with the addition of water vapor to CO stems not from the water vapor but from the CO_2 formed at first by the water gas reaction and increasing further during the reduction of the iron oxides. The results verify the earlier views that the inhibiting influence of CO_2 on the rate of reduction of reactive zones Fe_3O_4/Fe and Fe_3O_4/FeO can be studied quantitatively starting from the distribution of these surfaces between absorbed molecules of both gases, producing the forward and back reaction. Carbon dioxide has essentially no inhibiting influence on the rate of reduction with CO of the reaction zone Fe_2O_3/Fe_3O_4. The rate of reduction of this zone depends on the temperature and on the partial pressure of CO, and the CO_2 present does not promote the adsorption effect of the inhibition of the rate of the process.

Torssel, Kurt.
AN ELECTROMETRIC AND POLAROGRAPHIC INVESTIGATION INTO THE FORMATION OF COMPLEXES BETWEEN BORIC ACID AND POLYALCOHOLS. [1959] 12p. (5 tables 7 figs. omitted) 15 refs.
Order from SLA mi$2.40, ph$3.30 59-15746

Trans. of Arkiv [for] Kemi (Sweden) 1952, v. 3 [no. 62] p. 571-580.

The complex constants $K_1 = [BD^-]/[B^-][D]$ and $K_2 = [BD_2^-]/[B^-][D^2]$, for fructose and mannite were computed where $B^- + D = BD^-$, $B^- + 2D = BD_2^-$, $HB = H^+ + B^-$, $HBD_2 = H^+ + BD_2^-$, and $HBD = H^+ + BD^-$, when HB represents boric acid and D stands for polyalcohol. At 25°C, emf measurements gave, for mannite, $K_1 = 5.6 \times 10^2$ and $K_2 = 1.16 \times 10^5$, and for fructose, $K_1 = 6.9 \times 10^2$ and $K_2 = 0.83 \times 10^5$. A polarographic measurement at 20°C gave $K_1 = 7.0 \times 10^2$ for fructose. The complex acids HBD and HBD_2 are strong acids and are almost completely dissociated. The presence of B_2D^- or $B_2D_2^-$, and probably BD_3^-, was demonstrated for fructose. The presence of borate lowers the polarographic rise for fructose in proportion to the amount of complex-bonded fructose. The boric acid becomes bonded to the second carbon atom of the fructose. The dependence of the height of the rise of the polarographic wave on the pH is investigated.

Umstätter, H.
SUPPLEMENT TO MY WORK: THE ANOMALIES OF RELATIVE VISCOSITY INCREASE IN EXTREMELY DILUTE SOLUTIONS OF HIGH POLYMERS. [1959] 3p.
Order from SLA mi$1.80, ph$1.80 59-15966

Trans. of unidentified German mono.

The degree of accuracy of the data in the former work is discussed.

Vaynshteyn, L. A., Koloshnikov, V. G. and others.
ON THE BROADENING AND SHIFT OF SPECTRAL LINES IN A HIGHLY IONIZED PLASMA, tr. by A. N. Dellis. Sep 58, 6p. 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 NP-tr-197

Trans. of *Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1958, v. 22, no. 6, p. 718-719.

The width, γ, and shift, Δ, of AII spectral lines in a spark discharge were photographically measured. The ratio γ/Δ was 2 to 10, instead of 1.16 as demanded by the collision theory. There is evidently no foundation for considering the field as slowly changing, quasi-static, as is done in the existing theory.

Wittig, Georg and Wittenberg, Dietmar.
ON THE MANNER OF REACTION OF UNSATURATED COMPOUNDS TOWARD TRITYLSODIUM IN PRESENCE OF COMPLEX-FORMERS. III. [1959] 23p. (4 figs. omitted) 25 refs.
Order from SLA mi$2.70, ph$4.80 59-15942

Trans. of Justus Liebigs Annalen der Chemie (West Germany) 1957, v. 606 [no. 13] p. 1-13.

An extension of previous studies (Justus Liebigs Annalen der Chemie 592:38, 1955; and 566:106, 1950) indicates that tritylsodium enters in diverse reactions with unsaturated compounds, adding on to open-chain 1,3-dienes, reducing cyclooctatetraene, metallizing other cyclic dienes, and acting as a proton acceptor toward vinyl chloride and vinyl phenyl ether. In the presence of organometallic complex-formers the primary adduct of tritylsodium to diene is captured and more or less completely withdrawn from the chain growth. A decisive factor for the deactivation is the complex-forming tendency, which decreases in the sequence $(C_6H_5)_3B > (C_6H_5)_3Al > (C_6H_5)_2Be > (C_6H_5)_2Mg > C_6H_5Li$, and codetermines the position of the equilibria $[(C_6H_5)_nZ(R)]Me \rightleftarrows (C_6H_5)_nZ + (R)Me$, and, via these, affects the addition processes. The complexing tendency of triphenylboron expresses itself in an exclusively directed 1,2-addition of tritylsodium to the diene and in its acceleration. An explanation for this is found in the combining of the complex-former with the diene into a π-complex which represents the preliminary stage for the isolatable complex tritylsodium-diene polymerization inhibitor. The formation of π-complexes also makes understandable the conversion, brought about by tritylsodium and accelerated by triphenylboron, of vinyl chloride to acetylene.

Yokota, Noriyuki.
SOLUBILITY OF CHLORINE GAS IN CONCENTRATED SODIUM CHLORIDE SOLUTIONS. [1959] 12p. 8 refs.
Order from SLA mi$2.40, ph$3.30 59-15614

Trans. of Kagaku Kogaku (Japan) 1958, v. 22, p. 476-482.

The solubility of Cl_2 gas was studied using chlorine liberated from a NaCl electrolyte in a mercury cell, the salt concentrations being 200 to 300 g/liter, the Cl partical pressures 0.1 to 1.0 atm, and the temperatures 30° to 70°C. The solubility in concentrated solutions is given by the sum of $Cl_2(aq)$, Cl_3^-, and HClO. At pH 2, HClO is virtually negligible, and the relationship between the Cl partial pressure and the solubility is given by Henry's law. At pH 1, the observed Cl solubilities are given by the empirical equation $[Cl_2(aq)] + [Cl_3^-] = P(2.21 - 0.00398N) \times 10^{-5} \times 101,000/T$, where P represents partial pressure of the Cl gas, in atmospheres, and T is given in °K. A nomograph, prepared from the above equation, is given for obtaining solubilities of unhydrolyzed chlorine in concentrated NaCl solutions.

Yurzhenko, T. I., Gromova, G. N., and Khaytser, V. B.
INVESTIGATION OF VARIOUS TYPES OF PEROXIDES AS INITIATORS OF EMULSIVE POLYMERIZATION. [1959] 34p. 19 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-15923

Trans. of [Zhurnal Obshchey Khimii] (USSR) 1946, v. 16, [no. 9] p. 1505-1520.

A comparative study of some types of peroxides was made on the basis of their catalytic activity during the polymerization of butadiene-1,3 in aqueous emulsions. The connection between the catalytic activity and the rate of decomposition of the peroxides was clarified. Hydroperoxides of tertiary alcohols, $(CH_3)_3COOH$ and $C_2H_5(CH_3)COOH$, were highly active catalysts, potassium persulfate was medium active, while benzoyl peroxide, hydrogen peroxide, and sodium perborate showed very little activity. Trimethylcarbinol hydroperoxide was highly stable, H_2O_2 and sodium perborate were unstable, while potassium persulfate and benzoyl peroxide were moderately stable under conditions approaching those of the polymerization reaction. The distinction in the decomposition and polymerization rates is explained by differences in the mechanism of their action as initiators in the polymerization process. As the concentration of hydroperoxides of tertiary alcohols is increased, the rate of polymerization passes through a maximum corresponding to a concentration at which complete saturation of the adsorption layer takes place. The subsequent retardation of the polymerization reaction is explained by the participation of the hydroperoxide in the rupture reaction. The hydroperoxides of tertiary alcohols are characterized by the fact that, as their concentration is increased, the molecular weight of the resulting polymers and their swelling capacity decrease while the solubility of the polymers increases.

EARTH SCIENCES

*AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA GEOFIZICHESKAYA, 1958, NO. 11, P. 1265-1424 (News of the Academy of Sciences of the USSR. Geophysics Series). [1959] 1v. SOV-49-58-11-(1-18)/18.
Order from OTS $0.80, $4.50/6 mo. PB 141 042T-11
Foreign $1.05, $6.00/6 mo.

Consists of abstracts in English.

THE STUDY OF THE LITHOLOGY OF ROCKS FORMING BORE-HOLE PROFILES FROM SELF-POTENTIAL DATA. [1959] 6p.
Order from ATS $9.35 ATS-49L30R

Trans. of Izvest[iya] Vysshikh Uchebnykh Zavedeniy. Neft' i Gaz (USSR) 1958, no. 7, p. 11-15.

Fresenkov, V. G.
THE NATURE OF ZODIACAL LIGHT (A). REDUCTION OF OBSERVATIONS OF ZODIACAL LIGHT (B). ZODIACAL LIGHT AS A PRODUCT OF THE DISINTEGRATION OF ASTEROIDS (C). Soviet IGY Studies on Zodiacal Light. 5 Mar 59, 27p. 11 refs. JPRS: 1312-N.
Order from OTS $0.75 59-13258

Trans. of Akademiya Nauk Kazakhskoy SSR, Alma-Ata. Vestnik, 1958, no. 8, p. 3-9 and Astronomicheskiy Zhurnal (USSR) 1958, v. 35, no. 3, p. 323-334.

Climatology and Meteorology

METEOROLOGICAL ORGANIZATION AND FACILITIES IN SOVIET CENTRAL ASIA. 8 May 59 [61]p. 66 refs. AF 1255700.
Order from LC or SLA mi$3.90, ph$10.80 59-16444

Trans. from Soviet open sources.

Information is devoted mainly to the network of stations of the Soviet Hydrometeorological Service. Included are an evaluation of techniques and equipment, a discussion on the training and educational level of meteorologists, and a list of the hydrometeorological network stations in Central Asia. All meteorological service stations are under the central management of Moscow. Practically all the weather forecasting, for all regions of the country, is done by the Central Forecasting Institute of Moscow. This agency, together with the Central Aerological Laboratory and the Main Geophysic Observatory, participates in management, direction, operations, and research of the whole network of meteorological stations of the Soviet Union, including those in Central Asia.

METEOROLOGIYA I GIDROLOGIYA (USSR) 1959, NO. 1, P. 3-70 (Meteorology and Hydrology). [1959] [16]p. SOV-50-59-1-(1-20)/20.
Order from OTS $0.70, $4.00/6 mo. PB 141 045T-13
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

Belyakov, M.
RADAR AIDS IN METEOROLOGY. [1959] 10p. (6 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-15996

Trans. of Radio [Moscow] (USSR) 1953, no. 1, p. 17-19.

Radar is used to track pilot balloons in the measurement of wind velocities at high altitudes. It may also be used to detect precipitation.

Bonetti, Elio [M.].
MICROBIOLOGICAL RESEARCH ON PETROLEUM-BEARING SOILS. [1959] 12p. 3 refs.
Order from SLA mi$2.40, ph$3.30 59-15252

Trans. of Annali di Microbiologia (Italy) 1954, v. 6, p. 51-60.

Soils around the natural gas and petroleum wells in the Padana Valley are impregnated with liquid or volatile hydrocarbons. Samples of these soils were examined microscopically to determine possible negative or positive influences on crops through the metabolism of the anomalous microflora developed as a result of the presence of hydrocarbons (especially Azotobacters). A slight decrease in pH was encountered. Soils that were in prolonged contact with blowout mud or with hydrocarbon-rich substances revealed microflora characterized by intense pigmentation. Aerobic cellulose-decomposing organisms virtually disappeared. The influence on nitrogen fixing and nitrifying bacteria was less apparent, for in some cases they were inhibited, and in others stimulated. The number of sulfate reducing organisms varied somewhat and tended to increase in the presence of hydrocarbons.

Gogishvili, K. S.
SOME FEATURES OF THE ATMOSPHERIC PROCESSES WHICH PREVENT PENETRATION OF COLD AIR INTO THE SOUTHERN CAUCASUS (O Nekotorykh Osobennostyakh Atmosfernykh Protsessov, Prepyatstvuyushchikh Proniknoveniyu Kholodnogo Vozdukha na Yug Kavkaza) tr. by A. Koriakov, ed. by David Kraus. Dec 58 [7]p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-16020

Trans. of Meteorologiya i Gidrologiya (USSR) 1957, no. 3, p. 37-40.

Krasnogorskaya, N. V.
THE CHANGE IN ATMOSPHERIC-ELECTRIC CONDUCTIVITY UNDER VARIOUS METEOROLOGICAL CONDITIONS (Ismeneniye Elektricheskoi Provodimosti Vozdukha v Razlichnykh Meteorologicheskikh Usloviyakh) tr. by John Miller. Sep 58, 17p. 15 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-16280

Trans. of *Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya 1958, no. 4, p. 527-535.

Results are presented of the measurement of atmospheric conductivity on Mount Elbruz on cloudless days and on days with cloudiness and precipitation. It was established that when the values of the potential gradient of the electric field are high, atmospheric conductivity at the earth's surface decreases regardless of weather conditions, while an increase in the absolute magnitude of the electric field is accompanied by a sharp decrease in the density of those ions which are opposite in sign to the vertical component of the potential gradient of the electric field. Atmospheric conductivity considerably decreases in stratocumulus clouds due to the interaction of cloud droplets with positive as well as with negative ions. At the earth's surface there is no preeminent adsorption of negative ions by cloud droplets in Sc clouds.

Lebedeva, N. V., Mishutin, D. A., and Pikush, N. V.
THE CATASTROPHIC TORRENTIAL DOWNPOUR AT NIKOLAYEV (Katastroficheskiy Liven' v Nikolayeve) tr. by John Miller. Oct 58, 8p.
Order from LC or SLA mi$1.80, ph$1.80 59-16282

Trans. of Meteorologiya i Gidrologiya (USSR) 1957, no. 1, p. 37-41.

A downpour which occurred on 30 June 1955 is described, and evidence is adduced to show that the record precipitation was the result of thermal convection.

Litvinov, I. V.
THE ORIGIN OF MULTILAYERED HAILSTONES (O Proiskhozhdeniy Mnogosloynykh Gradin) tr. by John Miller. Oct 58 [8]p. 10 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-16283

Trans. of *Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1958, no. 2, p. 277-279.

When the water content is considerable, a transparent layer may form on hailstones in presence of low negative air temperatures and in absence of drops of drizzle-size in the cloud. The opaque central nucleus of a multilayered hailstone can be explained by the fact that (with small diameters) a very high water content of the cloud (which is very unlikely) is required for a transparent layer to form on a growing elementary particle. Hailstones in the form of "pears" or "plates" may form when the hailstones fall through a cloud having a high water content. The presence of the multilayer-phenomenon can be explained by the fact that the descending hailstone traverses a region of the cloud with higher or lower water content. When passing through a region with high water content, the surface temperature of the hailstone rises and transparent ice forms. With low water content the surface temperature of the hailstone decreases and opaque ice forms.

Mühleisen, R.
THE ATMOSPHERIC ELECTRICAL RELATIONSHIPS OF THE COASTAL AEROSOL. PT. I. [1959] 14p.
Order from ATS $13.15 ATS-89L30G

Trans. of Arch[iv] f[ür] Meteorol[gie] [und] Geophysik. [Series A. Meteorologie und Geophysik] (Austria). 1959, v. 11, p. 93-108.

Polyakova, Ye. A.
VISIBILITY IN A RAINY ZONE. [1959] 6p. (1 fig. omitted) 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15882

Trans. of Meteorologiya i Gidrologiya (USSR) 1956, no. 8, p. 23-26.

The meteorological visibility range at nighttime is evaluated on the basis of the intensity of phenomena which determine air transparency (fog, haze, rain, etc.). The necessary prerequisite for visibility forecasting during rain is the forecasting not only of the possibility of rain, but also of its intensity according to gradations. In the course thereof the prediction of the visibility range in the rainy zone is more conveniently done in terms of points on the scale. To express the expected visibility range in km is inconvenient because to a definite value of precipitation intensity can correspond different values of visibility range in km within the limits of one point of the scale.

Shpak, I. S. and Murzin, L. P.
A SQUALL IN THE REGION OF THE TSIMLA RESERVOIR ON 25 JUNE 1956 (Shkval v rayone Tsimlyanskogo Vodokhranilishcha 25 iyunia 1956 g.) tr by John Miller. Dec 58, 5p.
Order from LC or SLA mi$1.80, ph$1.80 59-16019

Trans. of Meteorologiya i Gidrologiya (USSR) 1957, no. 4, p. 28-30.

Yamamoto, Takeo.
SECULAR VARIATION OF SUMMER RAINFALL IN THE FAR EAST. [1959] [4]p. 5 refs.
Order from SLA mi$1.80, ph$1.80 59-15535

Trans. of Kagaku (Japan) 1952, v. 22, no. 2, p. 96.

Data are presented which are derived from ancient Korean records and from the weather record in the Ishikawa family, covering the years 1720 to the present. Results of the observations are correlated with the rainfall curve for Tokyo: both have a high plateau extending over about 90 years. The secular variation of the summer climate of the Far East is controlled by the intensity and position of the North Pacific high.

Geodesy

CARTOGRAPHY IN THE BIRD'S EYE VIEW. 15 Dec 58, 10p. (6 figs. omitted) 12 refs. JPRS Trans. L-1310-D.
Order from OTS $0.50 59-11380

Trans. of report on slide lecture held 10 May 58 in Niederdollendorf on the occasion of the work course of the Deutsche Gesellschaft für Kartographie.

GEODEZIYA I KARTOGRAFIYA (USSR) 1958, 1959 (Geodesy and Cartography).
Order from OTS $0.60, $3.50/6 mo.
Foreign $0.85, $5.00/6 mo.

1958, no. 11, p. 3-79, PB 141 001T-11
1958, no. 12, p. 3-74, PB 141 001T-10
1959, no. 1, p. 3-80, PB 141 001T-12

Consists of abstracts in English.

IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY. GEODEZIYA I AEROFOTOS"YEMKA (USSR) 1958 (News of Institutes of Higher Learning, Geodesy and Aerial Photography).
Order from OTS $0.70, $4.00/year
Foreign $0.95, $5.50/year

No. 4, p. 2-168, PB 141 007T-5
No. 6, p. 2-171, PB 141 007T-6

Consists of abstracts in English.

Geography

ACTIVITIES IN THE ARCTIC AND ANTARCTIC [NO. 10, 11 June 59]. [1959] [8]p. 12 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-16993

Trans. of unevaluated information selected from Russian-language publications.

The major portion of this bulletin is devoted to a discussion of icebergs in the vicinity of Greenland and in the Antarctic.

NATURAL GEOGRAPHIC DATA OF NORTH CHINA. PT. I. 19 Dec 58, 46p. (all maps, diagr. tables, charts omitted) 30 refs. JPRS Trans 1002-N.
Order from OTS $1.25 59-13173

Trans. of Hua-pei-ch'u Tzu-jan Ti-li Tzu-liao, Peiping, Dec 1957, p. 1-97 [pt. 1].

Topics discussed herein are geomorphology and climate. (See also 59-13029, 59-13082)

NATURAL GEOGRAPHIC DATA OF NORTH CHINA. PT. II. 5 Jan [59] 27p. (all maps, diagr. tables omitted) 3 refs. JPRS Trans. 1006-N.
Order from OTS $0.75 59-13029

Trans. of Hua-pei-ch'u Tzu-jan Ti-li Tzu-liao, Peiping, Dec 1957, p. 1-97 [pt. 2].

The present document gives all but the few final pages of the discussion on hydrological geography. These final pages are contained in 59-13082. (See also 59-13173)

NATURAL GEOGRAPHIC DATA OF NORTH CHINA. PT. III. 26 Jan 59, 47p. (14 photos omitted) 26 refs. JPRS: 1139-N.
Order from OTS $1.25 59-13082

Trans. of Hua-pei-ch'u Tzu-jan Ti-li Tzu-liao, Peiping, Dec 1957, p. 1-97 [pt. 3].

The concluding pages for the previous discussion (59-13029) on hydrological geography are presented and an article on the geography of soils is given. (See also 59-13173)

TENTATIVE SCHEMES FOR DIVIDING THE NATURAL REGIONS OF CHINA. 26 Jan 59, 242p. JPRS: L-1434-D.
Order from OTS $3.50 59-11430

Trans. of book pub. by K'o-hsueh Ch'u-pan-she, Peiping, 1956, 159p.

Seven tentative schemes are presented for dividing the geographical regions of China into physico-geographical regions, geomorphological regions, climatical regions, hydrographical regions, pedogeographical regions, phytogeographical regions, and zoogeographical regions. Division of these tentative schemes into seven regional types is based partly on experimental division with established miscellaneous material, and partly on the revision of the foundation for schemes set down by others before us; furthermore, there is a purpose to such division. Most of these pages concentrate on regional description; a lesser number is used to describe the country as a whole. The purpose of these schemes is the division into natural regions and not the division into belts. The rough draft for these schemes was initiated by the Physical Geography Section of the Chung-hua Ti-li-chih, and discussion and criticism of it have been invited from pertinent authorities in the criticism of it have been invited from pertinent authorities in the related fields.

Geology

*AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA GEOLOGICHESKAYA, 1959 [V. 24] (News of the Academy of Sciences of the USSR. (Geology Series).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 3, p. 19-127, PB 141 005T-14
No. 4, p. 3-127, PB 141 005T-13

Consists of abstracts in English.

*GEOKHIMIYA (USSR) 1958, 1959 (Geochemistry).
Order from OTS $0.60, $2.25/6 mo.
Foreign $0.85, $3.25/6 mo.

1958, no. 8, p. 695-765, PB 141 002T-8
1959, no. 1, p. 3-100, PB 141 002T-9

Consists of abstracts in English.

MINERAL RESOURCES: REPORTS OF THE FRENCH INDOCHINA RESOURCES SURVEY GROUP. 25 Aug 58, 18p. JPRS(NY)-L-313.
Order from OTS $0.50 PB 141 179T

Trans. of Kobutsu Shigen; Futsu-in Shigen Chosa-dan [Hokoku] (Japan) 1944, v. 2, pt. 1, p. 13-17, 381-388, 431-438.

Contents:
Copper Mine at Van Sai Along the Riviere Noire Valley in Tonkin Province, Ch. 1, p. 13-17.
Antimony Glance Deposit in the Vicinity of Ke Lon in the Annan Province, Ch. 1, p. 381-388.
Various Silver-Lead Deposits near Nyanson in Bac Gan Prefecture Annan Province, Ch. 2, p. 431-438.

Bulygin, V. Ya.
ESTIMATE OF PERMEABILITY AND ELASTIC CAPACITY OF OIL-BEARING FORMATIONS FROM PRODUCTION DATA [Otsenka Pronitsayemosti i Uprugoyemkosti Neftyanykh Plastov po Eksploatatsionnym Dannym]. [1959] 5p.
Order from ATS $7.75 ATS-85L31R

Trans. of Neft[yanoye] Khoz[yaystvo] (USSR) 1957, v. 35, no. 7, p. 35-38.

Physical and hydromechanical methods used in studies of oil-bearing formations are reviewed. An isobar map is used to study the hydromechanical properties of an oil-bearing formation. The map is divided into a series of segments by drawing flow lines perpendicular to the isobars. The total yield of the wells is determined in each segment. The distance between the flow lines is established and the pressure drop is found for each segment. This method is proposed for the determination of reservoir characteristics during the production time.

Cherdyntsev, V. V.
DETERMINATION OF THE ABSOLUTE AGE OF THE PALEOLITHIC. [1959] 23p.
Order from ATS $27.20 ATS-42L29R

Trans. of Sovet[skaya] Arkheol[ogiya] (USSR) 1956, v. 25, p. 64-86.

Gerling, E. K., Yashchenko, M. L., and Yermolin, G. M.
THE ARGON METHOD OF DATING AND ITS APPLICATIONS. [1959] 19p.
Order from ATS $21.65 ATS-52L29R

Trans. of [Akademiya Nauk SSSR]. Komissiya po Opredeleniyu Absolyut[nogo] Vozrasta Geol-[ogicheskikh] Formatsii. Byulleten', 1957, no. 2, p. 8-27.

Gzovskiy, M. V.
THE MODELING METHOD IN TECTONOPHYSICS. [1959] [27]p. 59 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-15575

Trans. of Sovetskaya Geologiya; [Sbornik Statei] (USSR) 1958, no. 4, p. 53-72.

The properties which models for simulating natural geological structures should have can be defined by the theory of physical similitude and by available information regarding the mechanical properties of rocks. By means of tests with models, laws and supplementary facts have been established which in natural geological structures it would be either highly laborious or impossible to detect. This applies primarily to the study of structural details of the earth's crust down to great depths, to tracing the history of the development of deformations and faults throughout very long periods of time, to studying the stressed state of the crust, and to determining the physical conditions for the occurrence of deformations and faults of definite types. Consequently, modeling is a technique capable of advancing the solution of various geological and geophysical problems. (Paper read at the Eleventh General Assembly of the International Geodetic and Geophysical Union in 1957).

Li, Lien-chieh
PHYSICAL REGIONS OF THE TIBETAN PLATEAU. 13 May 59, 17p. 2 refs. JPRS 711-D.
Order from OTS $0.50 59-11545

Trans. of Ti-Li Hsueh-pao (Chinese People's Republic) 1954 [v. 20] no. 3, p. 255-266.

Lou, T'ung-mao
SEVERAL GEOMORPHOLOGICAL PROBLEMS OF THE WU-TING HO VALLEY IN NORTHERN SHENSI. 14 May 59 [24]p. 3 refs. JPRS 685-D.
Order from OTS $0.50 59-11534

Trans. of Ti-Li Hsueh-pao (Chinese People's Republic) 1957 [v. 23] no. 3, p. 235-242.

The problems include the physiographic development of the Wu-ting River terraces, the origin of the bottle-shaped river valley of the upper Yu-chi River, and the origin of the sand dunes in the Yu-lin and Ting-pien areas. These three problems are closely related to the development of the Wu-ting River river system.

Miroshnichenko, Y. M.
APPLICATION OF THE pH METHOD FOR DIFFERENTIATION OF CARBONATE INTERVALS IN OIL FIELDS. [1959] 7p.
Order from ATS $9.65 ATS-50L30R

Trans. of Izvest[iya] Vysshikh Uchebnykh Zavedeniy. Neft' i Gaz (USSR) 1958, no. 8, p. 17-23.

Panov, D. G.
NEOTECTONIC MOVEMENTS IN THE ARCTIC REGION, presented by M. N. Strakhov, [1959] 5p. 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15699

Trans. of Akad[emiya] Nauk SSSR. Dok[lady] 1955, v. 104, no. 3, p. 462-465.

Neotectonic movements on the arctic coasts of the Eurasian and North American continents, the continental shelf areas, the archipelagos within the shelf region, and the oceanic depressions are described briefly with reference to the influence of the Quaternary glaciation.

Zav'yalov, V. D. and Stolyarova, Ye. N.
SEISMOPROSPECTION WORKS BY THE METHOD OF MASSIVE SPATIAL SOUNDINGS (MSS). [1959] 29p. 3 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-15843

Trans. of Prikladnaya Geofizika (USSR) 1957, no. 17, p. 33-66.

An attempt is made to determine to what measure the experience, accumulated in the West-Ukrainian geophysical office of the trust Ukrneftegeofizika can be generalized, and to clarify the basic peculiarities of field and office work in the method of massive spatial seismic soundings, which had appeared to be the most effective in the conditions of the internal zone of the Precarpathian depression.

Oceanography

Kriss, A. Ye. and Markyanovich, Ye. M.
OBSERVATIONS ON THE RATE OF MULTIPLICATION OF MICROORGANISMS IN THE MARINE ENVIRONMENT. [1959] [18]p. 9 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15717

Trans. of Mikrobiologiya (USSR) 1954, v. 23 [no. 5] p. 551-560.

Studies on the increase of microorganisms on glass slides submerged in the littoral and open regions of the Black Sea and the Caspian Sea were conducted. Observations were made throughout the year 1952/53. The biomass in the open sea is shown to increase in a range fluctuating between 13 and 80%, amounting to 0.08 to 7.3 mg/cu m water.

Mednikov, B. M.
ON THE PLANKTON OF THE NORTHWESTERN PART OF THE PACIFIC OCEAN (O Planktone Severo-Zapadnoy Chasti Tikhovo Okeana). 1958 [13]p. 10 refs. Trans. series no. 183.
Order from LC or SLA mi$2.40, ph$3.30 59-15964

Trans. of mono. Materialy po Biologii Morskovo Perioda Zhizni Dalnevostochnykh Lososey, Moscow, 1958, p. 76-86.

The following conclusions are drawn from an examination of the plankton samples (786) collected from June 1955 to Sept. 1956 by various expeditions of the Kamchatka Division of TINRO (Pacific Ocean Fisheries Institute) during investigations of the ocean period of the life of salmon, and from available literature. The pelagic region of the North Pacific can be divided into two zones: intermediate-cold and warm-water (tropical and subtropical) with a transitional zone between them. The Kuro-Sivo front appears to be the boundary between the zones. This boundary varies according to the time of year. In the plankton of the temperate zone are found few species, mainly the large upper-bathypelagic calanids. The warm-water plankton is distinguished by the extraordinary quality of richness in small species. In spite of the fact that the biomass of plankton in the warm-water zone is small, we can not assume that there is less plankton production than in the temperate zone. The biomass of plankton in the temperate zone is distributed unevenly. Along the coast of Kamchatka and the Kurile Islands there occurs a band of increased biomass. This indicates a sudden increase in the vertical circulation and a difference in duration of the biological seasons in the coastal zones and in the open ocean. In the life of salmon great significance attaches to the diurnal vertical migration of bathypelagic forms, which, in the surface strata, serve as food for the salmon and other pelagic fish. These vertical migrations, which have been observed in all sections of the Northwest Pacific, are not dependent on the ascent of the deep waters but are only intensified by them.

Panov, D. G.
TECTONICS OF THE CENTRAL ARCTIC. [1959] [5]p. 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15700

Trans. of Akad[emiya] Nauk SSSR. Dok[lady] 1955, v. 105, no. 2, p. 339-342.

The tectonics of the Central Arctic Basin are discussed in the light of recent seismographic findings by Soviet explorers, in particular the discovery of a suboceanic mountain system, the Lomonosov Range, cutting across it from the New Siberian Islands to Greenland and Ellesmere Land.

Sysoyev, N. N.
ON THE USE OF RADAR STATIONS DURING OBSERVATIONS OF SEA-CURRENTS. [1959] 10p. (5 illus. omitted) 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15869

Trans. of [Akademiya Nauk SSSR. Institut Okeanologii. Trudy] 1956, v. 19, p. 117-128.

Experiments in observing the currents by means of free float-markers, their results being registered by the radar station established on the vessel, indicate that: (1) the application of free markers launched from a vessel, conducting oceanographic observations on the anchor lasting many hours, is both possible and advisable, inasmuch as information can be received in this way which is necessary in order to form a judgement about the character of the currents in a considerable area surrounding the ship; (2) in order to obtain the essential precision in the observations of currents, and thus in their trajectories, the observation should be limited to those stations for which data is provided by the radar station about the position of the vessel and of the markers with the precision of 0.1 miles; and (3) inasmuch as the results in the measurement of currents by means of free markers depend rather largely on the size of the under- and above-water parts of the markers should not be below 5 and that the relations between the speeds of wind and current should not exceed 20.

Seismology

Arkhangel'skaya, V. M.
EXPANDED SEMINAR OF THE DIVISION OF SEISMOLOGY AND THE SEISMIC SERVICE OF THE INSTITUTE OF PHYSICS OF THE EARTH, ACADEMY OF SCIENCES USSR, DEVOTED TO THE STUDY OF SURFACE SEISMIC WAVES. 22 May 59, 17p. 10 refs. JPRS: L-774-N.
Order from OTS $0.50 59-13497

Trans. of *Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1958, no. 12, p. 1522-1529.

The basic content is given of 12 reports read at the expanded seminar of the division of seismology and of the seismic service, dealing with the results of investigations of surface waves, held at the Institute of Physics of the Earth, Academy of Sciences USSR from Dec. 9th to 11th, 1957.

Kirnos, D. P.
SOME PROBLEMS OF INSTRUMENTAL SEISMOLOGY (Nekotoryye Voprosy Instrumental'noy Seysmologii). [1959] 221p. 37 refs. F-TS-9252/V.
Order from LC or SLA mi$9.90, ph$24.80 59-16866

Trans. of Akademiya Nauk SSSR. Geofizicheskiy Institut. Trudy, 1955, no. 27(154), 168p.

The present work is a summary of the results of the author's research connected with the design and construction of a number of new systems of seismic instruments intended mainly for use as seismic station equipment. In this work, questions of theory are discussed, together with the justification of the methods of calculation and design of seismic instruments with direct and galvanometric recording, which are the most improved types for stationary observations. The discussion of these general questions is illustrated by a description of the elements of calculation and design of the methods of determining the constants, and the results of tests of three new systems of seismographs developed by the author in connection with the reorganization of the Seismic Service USSR.

ENGINEERING

RAZVEDKA I OKHRANA NEDR (USSR), 1959 [V. 25] NO. 2, P. 1-63(Exploration and Conservation of Natural Resources). [1959] [16]p. SOV-132-59-2-(1-16)/16.
Order from OTS $0.50, $3.00/6 mo. PB 141 135T-12
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

TEKHNIKA MOLODEZHI (USSR) 1958, V. [26] NO. 12, P. 1-38 (Engineering for Youth). [1959] 1v. SOV-29-58-12-(1-23)/23.
Order from OTS $0.50, $6.00/year PB 141 024T-10

Consists of abstracts in English.

Karbelashvili, O. D. and Ivanov, V. S.
AMELIORATION DE LA FORATION ET DU TIR DANS L'EXPLOITATION DES FILONS MINCES [Improvement of the Boring and Firing in the Exploitation of Small Veins] tr. by T. Amilakvari and A. Ginocchio. 7 Oct 58 [9]p. Trans. no. R 483 (text in French).
Order from LC or SLA mi$1.80, ph$1.80
CEA-tr-R483

Trans. in French of Gornyy [Zhurnal] (USSR) 1958 [no. 1] p. 35-37.

Dans l'exploitation des filons minces par abattage sélectif du minerai, si l'on veut amoindrir l'effet de la force de l'exploision sur les épontes, il faut utiliser des cartouches de 22mm de diamètre au plus; ceci diminue considérablement l'appauvrissement du minerai et abaisse la consommation d'exploisif presque de moitie. Abaisser le diametre des trous a 26mm double le rendement de la foration et diminue sensiblement la consommation d'acier de fleuret et de carbure de tungstène. Il est donc nécessaire que l'industrie commence au plus tôt la fabrication de cartouches de 22 et 27 mm de diamètre, pesant respectivement 100 et 150 gr, de plaquettes de carbure de tungstène de 26, 28 et 31 mm de long, ou de taillants amovibles de 26, 28 et 31 mm de diamètre, d'acier de fleurets de 19 à 20 mm de diamètre. Il faudrait également organiser la fabrication centralisée de fleurets monoblocs a carbure de tungstène de faible diamètre, ce qui augmenterait considérablement leur qualité et diminuerait la perte d'acier de fleuret et de carbure de tungstène.

Tsygankov, A. S.
SHIP ELECTRIC DISTILLING EQUIPMENT ED25-50. [1958] 6p. (3 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-16651

Trans. of Sudostroyeniye (USSR) 1957, no. 6, p. 18-21.

Outstanding features of the electric distilling equipment are (1) a complete utilization of heat from a secondary steam condensed inside the equipment for heating the feed water, (2) cooling of a steam distillate and of a continuously discharged brine the heat of which is usually carried overboard by cooling water, and (3) the use of a compressor for compressing wet steam thus making the equipment highly economical. A reducing valve on the feed pipe for feed sea water, which maintains a consistant water pressure behind the valve, and a reliable supply regulator, which is used on the distiller, provide a continuous supply of water and maintain it at the same level in the body. The equipment can be operated reliably by ac or dc because when voltage changes the number of revolutions of a compressor and, consequently, the power of switched on electric heaters providing the necessary output of the equipment, change also. The separating arrangements in the equipment provide a very high quality of a distillate at different inclined positions and also during rolling of a ship up to 5°. The operation of the equipment at slightly increased pressure makes it possible to dispense with the use of a brine pump or brine discharging ejector and to utilize the distillate as drinking water. The bulkiness of electric equipment and, first of all, of an electric motor is one of the disadvantages of the equipment.

Aeronautical Engineering

IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY. AVIATSIONNAYA TEKHNIKA (USSR) 1958, NO. 4, P. 3-131 (News of Institutes of Higher Learning, Aeronautical Engineering). [1959] 1v. SOV-147-58-4-(1-15)/15.
Order from OTS $0.60, $2.25/year PB 141 401T-3
Foreign $0.85, $3.25/year

Consists of abstracts in English.

THE TU-104B. 30 Jan 59 [6]p. 2 refs. AF 1255503.
Order from LC or SLA mi$1.80, ph$1.80 59-18417

Trans. compiled from Sovetskaya Aviatsiya (USSR) 1958, no. 228, p. 2 and Grazhdanskaya Aviatsiya (USSR) 1958 [v. 15] no. 7, p. 21-23.

Biryulin, V.
DESIGN FEATURES OF COAXIAL HELICOPTERS (Konstruktivnye Osobennosti Soosnykh Vertoletov) tr. by A. [1959] [10]p. (5 figs. omitted). H-0877.
Order from OTS $0.50 59-11891

Trans. of Grazhdanskaya Aviatsiya (USSR) 1957 [v. 14] Nov, p. 17-20.

Petrovich, G. V.
BASIC PROBLEMS OF INTERPLANETARY NAVIGATION (Osnovnyye Problemy Kosmonavtiki). [1959] [16]p. 2 refs. F-TS-9691/III.
Order from LC or SLA mi$2.40, ph$3.30 59-14157

Trans. of Akademiya Nauk SSSR. Vestnik, 1958 [v. 28] no. 6, p. 28-34.

The basic requirements for interplanetary flight (speed, determination of trajectory, method of propulsion, etc.) are enumerated in laymen's language.

Chemical Engineering

ADVANTAGEOUS NEW PROCESS FOR PRODUCTION OF 1, 3-PROPYLENE-DIAMINE. [15 May 59] 7p.
Order from RIS $14.50 RIS rept. 96996

Trans. of German patent application B 43 227 (12q, 3) DAS 1 034 184, filed 23 Jan 57, pub. 17 July 58, by Badische Anilin- und Soda-Fabrik, A. G., Ludwigshafen.

A process is described for production of 1, 3-propylenediamine. Acrylonitrile is mixed with an excess of liquid ammonia, the preheated liquid mixture is treated with hydrogen under pressure at temperatures below 200°C in the presence of hydrogenation catalysts, and the resultant reaction mixture is worked up. Nickel and/or cobalt oxides which have been reduced in the hydrogen stream prior to the reaction, are used as catalysts. Preferably 8-12 parts by weight of liquid ammonia are used to 1 part by weight of acrylonitrile. The resultant reaction mixture is worked up by subjecting it to fractional distillation following a possibly partial depressurization, during which the hydrogen and the ammonia, or part of this, are separated from the reaction products with utilization of their heat content.

CONTINUOUS PRODUCTION OF ALDEHYDES BY ADDITION OF CARBON MONOXIDE AND HYDROGEN TO OLEFINIC COMPOUNDS. [15 May 59] 15p. 1 ref.
Order from RIS $29.25 RIS rept. 96987

Trans. of German patent application R 20 212 (12o, 7/03) DAS 1 034 167, filed 18 Dec 56, pub. 17 July 58, by Chemische Verwertungsgesellschaft Oberhausen m. b. H., Oberhausen-Holten.

A process is described for addition of carbon monoxide and hydrogen to olefinic compounds at elevated pressures and temperatures with the use of acid aqueous metal salt solutions as catalysts. The liquid olefinic feed stock is continuously passed from below upward in vertical cyclindrical pressure vessels, flowing through an oily reaction bed surmounting a layer of an aqueous metal salt solution, at the bottom of which the gas containing carbon monoxide and hydrogen is fed in, with the major portions of the two liquid phases remaining unmixed. The oily layer is of such a height that the aldehydic reaction product continuously taken off overhead entrains no appreciable amounts of the aqueous phase per se. The volumetric ratio between the two liquid phases varies between 1:4 and 4:1. The aqueous phase is continuously and/or intermittently renewed so that its volume and composition remain constant. The temperature in the two liquid phases is approximately equal. The average temperatures in the two liquid phases differ. The temperature rises from below upward in the two liquid layers. Aqueous cobalt solutions in the presence of iron are used as catalysts.

CYCLIC PROCESS FOR UTILIZATION OF WASTE SULFURIC ACID PICKLING LIQUORS. [29 May 59] 11p.
Order from RIS $12.50 RIS rept. 97035

Trans. of German patent application C 13 031 (12n, 2) Supplement to Pat. appl. C 7902, DAS 1 012 594, filed 17 May 56, pub. 25 July 57, by F. J. Collin, A. G. zur Verwertung von Brennstoffen und Metallen, Dortmund.

Process for utilization of waste pickling liquors containing ferrous sulfate according to Patent Application C 7902 IVa/12n is described. The precipitation of the ferrous hydroxide is accomplished outside the gas scrubber by the ammoniacal ammonium sulfate solution independently of the stoichiometric ratio of NH_3, H_2S and HCN in the feed gas.

IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY. KHIMIYA I KHIMICHESKAYA TEKHNOLOGIYA (USSR) 1958, NO. 5, P. 3-163 (News of the Institutes of Higher Learning. Chemistry and Chemical Technology). [1959] 1v. SOV-153-58-5-(1-28)/28.
Order from OTS $1.00, $5.50/year PB 141 056T-5
Foreign $1.25, $7.00/year

Consists of abstracts in English.

KISLOROD (USSR) 1958 [V. 11] (Oxygen).
Order from OTS $0.60, $3.50/year
Foreign $0.85, $5.00/year

No. 5, p. 1-73, PB 141 062T-6
No. 6, p. 1-45, PB 141 062T-7

Consists of abstracts in English.

NAUCHNYYE DOKLADY VYSSHEY SHKOLY. KHIMIYA I KHIMICHESKAYA TECHNOLOGIYA (USSR) 1958, NO. 3, P. 405-606 (Scientific Reports of Higher Schools. Chemistry and Chemical Technology). [1959] 1v. SOV-156-58-3-(1-52)/52.
Order from OTS $1.30, $5.00/year PB 141 066T-4
Foreign $1.55, $6.00/year

Consists of abstracts in English.

NEW ALIPHATIC POLYETHER RESINS. [8 May 59] 10p.
Order from RIS $19.00 RIS rept. 61009

Trans. of German patent application F 15 622 (39c, 30) DAS 1 023 227, filed 2 Sep 54, pub. 23 Jan 58, by Farbenfabriken Bayer A. G., Leverkusen.

A process is given for preparing polyether resins by polyaddition of cyclic ethers containing hydroxyl groups, characterized in that 3-methylol-3-alkyltrimethylene oxides are subjected to the polyaddition reaction, and the reaction products are, if desired, further modified by treatment with esterifying or etherifying agents.

PETROLEUM INDUSTRY, USSR. 4 Feb 59 [6]p. 5 refs. AF 1255507.
Order from LC or SLA mi$1.80, ph$1.80 59-18419

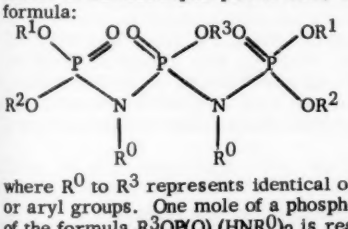
Partial and summarized translations of selected articles.

Topics discussed include (1) the automation of petroleum refining in the Bashkirian economic region, (2) the large-capacity polyethylene reactor recently completed at the Ural chemical equipment construction plant for use at the Sverdlovsk plastics plant, (3) the introduction of the 7-hr workday in the Soviet petroleum and natural-gas industries, (4) breakdown of Soviet refining goals for the period 1959-1965, and (5) Bashkiria -- big center of the petrochemicals industry.

PROCESS FOR PREPARING N-SUBSTITUTED ESTERS OF DIMIDOTRIPHOSPHORIC ACID [15 May 59] 4p.
Order from RIS $6.75 RIS rept. 97045

Trans. of German patent application B 46 704 (12o, 26/01) DAS 1 048 918, filed 8 Nov 57, pub. 22 Jan 59, by Joh. A. Benckiser G. m. b. H., Chemische Fabrik, Ludwigshafen.

A process is described for preparing N-substituted esters of diimidotriphosphoric acid, of the general formula:



where R^0 to R^3 represents identical or different alkyl or aryl groups. One mole of a phosphoric acid diamide of the formula $R^3OP(O)(HNR^0)_2$ is reacted in an inert solvent with 2 moles of a chlorophosphoric acid ester of the formula $ClP(O)(OR^1)(OR^2)$ and the calculated amount of an alkali metal or alkali metal hydride. The alkali metal or alkali metal hydride is used in the form of a suspension.

PROCESS FOR SEPARATION OF NITROALKANES. [15 May 59] 6p.
Order from RIS $11.00 RIS rept. 97046

Trans. of German patent application C 14 489 (12o, 3/01) DAS 1 050 743, filed 5 Mar 57, pub. 19 Feb 59, by Chemische Werke Huels A. G., Marl.

Activated carbon can be used for the separation and purification of nitroalkanes from gases, without any decomposition, if use is made of a hydrophobic activated carbon with acidic properties.

PRODUCTION OF δ,ϵ-UNSATURATED CARBOXYLIC ACIDS AND THEIR DERIVATIVES. [29 May 59] 7p. 2 refs.
Order from RIS $13.85 RIS rept. 96[6]98

Trans. of German patent application B 35 499 (12o, 21) filed 27 Apr 55, pub. 31 Oct 56, by Badische Anilin- und Soda-Fabrik A. G., Ludwigshafen.

A process is given for producing δ,ϵ-unsaturated carboxylic acids or their derivatives. Monoolefins bearing a methyl or methylene group near the double bond are reacted with compounds of the general formula

$$X - CH_2 - CH_2 - Y$$

where X represents a halogen atom, an hydroxyl, alkoxy, aryloxy or acyloxy group, Y a carboxyl, ester, carboxamide or nitrile group, and where X and Y together may also form a lactone group - O - CO -, at temperatures above 150°C, preferably in the presence of a diluent or solvent.

SELECTED TRANSLATIONS AND EXTRACTS ON CHEMICAL INDUSTRY OF COMMUNIST CHINA. 11 Mar 59, 35p. JPRS: 587-D.
Order from OTS $1.00 59-11460

Trans. of Hua-Hsueh Kung-Yeh (Chinese Peoples Republic) 1958, no. 5, p. 4-7, 16-17, 19-20, 25-32.

The following articles are included. Leap forward plans of China's chemical industry: Discussions are presented on the acceleration of plant construction, the economic and anti-waste plan, local industry support, and the supply situation in chemical engineering equipment. Technical and economic index of principal products of the first quarter of 1958: A tabulation. Report from the 1958 basic construction conference sponsored by the department of chemical industry of Communist China, by Shih Tseng-Chi. Better research programs of Shanghai local industries: A table is given which compares the accomplishments of the Mukden Research Laboratory with that of 3 organic synthetic plants and 8 dyestuff plants with respect to the manufacturing of phtalic anhydride, the production of procion, hydron blue, an-an blue B, and organic glass. Reference material for the construction of medium and small-scale plants: Consideration is given to the production of ammonium bicarbonate. The design of an electrolytic caustic soda plant: Based on the "stars all over the sky, flowers everywhere" policy of industrial construction issued by the Party Central Committee, the Academy of Basic Chemical Industry Design of

the Department of Chemical Industry recently proposed five different caustic soda plant model designs with outputs of 350, 1000, 3,500, and 7,500 tons/yr for use by local units according to their demand for caustic soda. Rubber plant model design: Five model rubber plants with 100-, 500-, 1,000-, 3,000-, and 6,000-ton outputs per year are described which are being designed by the Academy of Rubber Plant Design.

USSR MATERIALS AND MATERIALS PROCESSING EQUIPMENT [NO. 10, 23 JUNE 59]. [1959] [73]p. 162 refs.
Order from LC or SLA mi$4.50, ph$12.30 59-18399

Trans. of unevaluated information selected from Russian-language publications.

Soviet production goals and achievements are discussed under the following headings: (1) chemical industry, (2) chemical machinery, (3) petroleum and gas industries, (4) coal, peat, shale, (5) coal, peat machinery, (6) ferrous metallurgy, and (7) nonferrous metallurgy. (See also 59-18398)

USSR MATERIALS AND MATERIALS PROCESSING EQUIPMENT [NO. 11, 10 JULY 59] [1959] [66]p. 133 refs.
Order from LC or SLA mi$3.90, ph$10.80 59-18398

Trans. of unevaluated information selected from Russian-langugage publications.

Soviet production goals and achievements are presented for (1) the chemical industry, (2) chemical machinery, (3) petroleum and gas industries, (4) coal, (5) ferrous metallurgy, (6) nonferrous metallurgy, and (7) metallurgical machinery. (See also 59-18399)

VACUUM DEGASSING OF LOW-CARBON UNKILLED STEEL DURING POURING OR SOLIDIFICATION IN MOLD. PT. I. BOILING OF UNKILLED LOW-CARBON STEEL UNDER VACUUM. May 59, 1300 words.
Order from HB $3.75 HB-4599

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 7, p. 405-407.

Effect of solidification of unkilled low-carbon steel under reduced pressure upon content of slag inclusions in bottom-poured ingots. Setup used for pouring four 8-ton slab ingots at a time. Segregation in ingot core after fixation of residual oxygen by aluminum and its bearing on yield. Data on segregation in ingot tops. Composition changes during boiling under vacuum, with special reference to sulfur and phosphorus contents. Mechanical properties of resulting cold-rolled strip; improved deep drawing characteristics. (HB abstract)

Atlas, S. M. and Mark, H.
PROGRESS IN THE FIELD OF HIGH POLYMERS IN THE USA. [1959] 20p. 12 refs.
Order from SLA mi$2.40, ph$3.30 59-15873

Trans. of Angew[andte] Chem[ie] (West Germany) 1959, v. 71, no. 3, p. 110-119.

Bayer, Otto.
THE DIISOCYANATE POLYADDITION PROCESS (POLYURETHANE). [1959] 40p. (2 figs. omitted) 44 refs.
Order from SLA mi$3.00, ph $6.30 59-15888

Partial trans. of Angewandte Chemie (Germany) 1947, v. 59, no. 9, p. 257-288.

Becherer, G. and Thiele, B.
PRODUCTION AND X-RAY CRYSTAL STUDY OF HIGH-GLAZE AND GREY-GLAZE CARBON, AND LAMP BLACK (Über die Darstellung und Rontgenographische Kristallitgrossenbestimmung von Hochglanzkohlenstoff, Grauglanzkohlenstoff und Russ) tr. by M. Squires. July 58 [13]p. 15 refs. Library Trans. no. 751.
Order from SLA mi$2.40, ph$3.30 59-10055

Trans. of Experim[entelle] Techn[ik] d[er] Physik (Germany) 1956, v. 4, no. 2, p. 50-62.

A method of carbonization is described whereby it is possible to extract elemental carbon from hydrocarbon gas (n-heptane) by thermal dissociation. The high-glaze and grey-glaze carbon deposits produced under various experimental conditions, here described in detail, were finely crushed and subjected to X-ray study. All the X-ray photographs clearly show four Debye-Scherrer rings which correspond to interference from the (002), (111), (004) and (310) planes in graphite (orthohexagonal indexing). The half-widths deduced from the photometric curves were corrected by reference to Kochendörfer (Z. Krist. A105: 393, 1944) and the crystal sizes were determined therefrom by the method of Laue (Z. Krist. 64: 115, 1926) and Brill (Z. Krist. 68: 387, 1928; 72: 398, 1929; and 74: 147, 1930). These various modifications of the elemental carbon possess roughly equal crystal magnitudes, about 30 Å in diameter, and a cross-sectional height of 20 Å.

Brotzmann, K. Rüttiger, K. and others.
CONTROL MEASUREMENTS IN DEGASSING OF LIQUID STEEL IN VACUUM. May 59, 3600 words.
Order from HB $7.20 HB-4601

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 7, p. 410-414.

Equipment for measuring the volume, pressure, and composition of gases drawn of and the quantity of steel sucked up into degassing vessel at each lift. Evaluation of measured values for information on oxygen and hydrogen contents, degree of mixing of metal in ladle, and the transport forces required for movement of liquid steel. Nomograph for reading off the extractable oxygen content and example of how it

can be used. Rate of flow of metal through suction pipe of lifter vessel. (HB abstract)

Burkhardt, Arthur.
TECHNOLOGY OF ZINC ALLOYS: EXCERPTS. [1959] [61]p. (13 tables 150 figs. omitted) 59 refs.
Order from SLA mi$3.90, ph$10.80 59-15093

Trans. of excerpts of mono. Technologie der Zinklegierungen, Berlin, 1937.

Danusso, F[erdinando] and Sianesi, D[ario].
STEREOSPECIFIC POLYMERIZATION OF STYRENE. IV. THE EFFECT OF THE CATALYST RATIO IN THE SYSTEM Al $(C_2H_5)_3$-$TiCl_4$. [1959] [16]p. 6 refs.
Order from SLA mi$2.40, ph$3.30 59-15978

Trans. of [Ia] Chimica e l'Industria (Italy) 1958, v. 40, no. 11, p. 909-914.

The effect of the ratio ρ of the amounts of the two catalyst reagents that are used in the preparation of catalysts made from triethylaluminum and titanium tetrachloride on the polymerization of styrene was studied by following the course of the overall process of polymerization with time. When the values of the ratio ρ are low, a cationic and a stereospecific anionic process operate simultaneously, but independently. As the value of ρ increases beyond a certain limiting value, the amount of stereospecific catalyst (which is formed almost exclusively) becomes independent of the amount of triethylaluminum introduced; an excess of the latter, however, brings about an aging reaction in the catalyst and this effect increases with increasing ρ. In the first range of the ρ-values, the same catalyst is formed in lesser amounts, but it is stable with respect to time. The observations made lead to the formulation of kinetic relationships that describe the course of the overall reaction. (See also 59-15229 and 59-15033)

Derman, B. M.
LAWS GOVERNING GASIFICATION WITH STEAM AND OXYGEN. [1959] 5p. 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-16374

Trans. of Akademiya Nauk SSSR. Institut Goryuchikh Iskopayemykh. Trudy (USSR) 1957, v. 7, p. 61-65.

Equations for the gasification of carbon by oxygen, steam, and steam-oxygen blasts are obtained by ignoring the secondary factors, e.g., emission and decomposition of volatiles. It is shown that the equations of temperature and CO_2 distribution for oxygen and steam oxidation are individual cases of those for steam-oxygen oxidation.

Funke, V. F. and Samsonov, G. V.
PRODUCTION AND SOME PROPERTIES OF SILICON NITRIDE. [1959] [5]p. 9 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15749

Trans. of *Zhurnal Obshchey Khimii (USSR) 1958, v. 28(90) no. 1, p. 267-272.

A study was made of the conditions for nitriding elementary silicon at 970° to 1,600°C. The constants of the nitriding reaction and the energy of activation determined approximately in the reactive diffusion of nitrogen into silicon to form the phase Si_3N_4, the latter being 33,800 ± 719 cal/mol. The microhardness of Si_3N_4 is 3,337 ± 120 kg/mm^2. The low solubility of nitrogen in silicon and also the absence of a region of homogeneity of Si_3N_4 phase was established.

Hoshino, Kohei and Watanabe, Masamoto.
FRACTIONATION OF AMILAN (XV). DISTRIBUTION OF MOLECULAR WEIGHT OF AMILAN AND THE MECHANISM OF ITS POLYMERIZATION (XVI). Pts. 15-16 of Studies on Polyamidic Synthetic Polymers. [1959] 18p. 19 refs.
Order from SLA mi$2.40, ph$3.30 59-15801

Trans. of [Nihon Kagaku Zasshi] (Japan) 1949, v. 70 [no. 1/2] p. 24-30.

XV: The phase diagram of the system amilan-phenol-water and the direction of the fractionating operation were determined. Amilan was separated into 26 fractions at 70°, the viscosities of which were measured and plotted against the intrinsic viscosities. The relationship $\bar{M}_n = 10,400[\eta]^{1.61}$ was found between the molecular weight of amilan and its viscosity, which indicates that Staudinger's viscosity formula does not apply here. Amilan samples with various polymerization degrees were measured for viscosity, and the constant k in Huggins' equation was determined to be 0.37 when the viscosity was measured in m-cresol at 25°. (See also 59-15921) XVI: The heterogeneity of amilan was calculated. The viscosity-mean and numerical-mean molecular weight ratio, $\bar{M}_v$:$\bar{M}_n$, was 1.365, showing that amilan is much more homogeneous than polyhexamethylene adipamide. The distribution of molecular weight of amilan was more homogenous than provided for by the theory of Flory (J. Am. Chem. Soc. 58: 1877, 1936; and J. Chem. Phys. 12: 425, 1944).

Knüppel, H., Drevermann, A., and Oeters, F.
ELIMINATION OF OXYGEN IN VACUUM TREATMENT OF LIQUID STEEL. May 59, 4400 words.
Order from HB $8.80 HB-4602

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 7, p. 414-419.

Carbon-oxygen reaction in the degassing of steel by the vacuum-lifter process; rate-governing factors. Attainable degree of degassing. Duration of degassing; degassing rate compatible with a minimum period of lift. Effect of surface area of steel upon progress of degassing treatment; concept of lift ratio and its significance. Experiences gained in the vacuum degassing of carbon and chromium-alloyed steels. Relationship between oxygen in solution in melt and content of alloying elements in presence of relevant oxide; and dependence of oxygen content on chromium content; practical conclusions drawn for vacuum degassing of 0.5 to 10% Cr steels; confirmation by experiment. (HB abstract)

Knüppel, H., Brotzmann, K. and others
HEATING PROBLEMS IN INDUSTRIAL-SCALE DEGASSING OF LIQUID STEEL. May 59, 3300 words.
Order from HB $6.60 HB-4561

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 5, p. 272-276.

Heat losses of steel during degassing treatment; transient heat conduction; temperature distribution in refractory lining of degassing vessel; periodic heat losses through lining. Overall heat losses of a 77 N.T. melt in relation to heating power for 15-minute vacuum treatment; lessons to be learned from diagram; relative merits of high-power heating during vacuum treatment only as against low-power preheating of vessel. Resistance heating with hairpin elements vs. bar elements. Arc heating; deflected d-c arc; results obtained thus far with arc heating.

Kolesnikov, G. S. and Fedorova, L. S.
POLYMERIZATION OF ACRYLONITRILE IN PRESENCE OF TRIBUTYLBORON. [1959] 5p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-15969

Trans. of Akad[emiya] Nauk SSSR. Otdeleniye Khim-[icheskikh] Nauk. Izvestiya, 1952, no. 2, p. 236-237.

The etherate of boron fluoride, which by itself causes no polymerization of acrylonitrile, was an effective promoter of the polymerization of acrylonitrile in the presence of tributylboron. With a concentration of acrylonitrile in xylene of 13.3 g/100 ml, a reaction temperature of 70° and a polymerization time of 2 hr, the best yield of polyacrylonitrile was obtained with an equimolar ratio of catalyst and promoter and with a catalyst concentration of 2%. The yield of polyacrylonitrile was lowered but the molecular weight of the polymer was increased as the promoter concentration was raised above 2%. When the polymerization time was increased (up to 8 hr) the yield of polyacrylonitrile and the molecular weight of the polymer were increased. A temperature reduction (to 50°) lowered the yield of polyacrylonitrile but had little influence on the molecular weight of the polymer.

Kolesnikov, G. S. and Klimentova, N. V.
TRIBUTLYBORON: A CATALYST FOR THE POLYMERIZATION OF UNSATURATED COMPOUNDS. [1959] 3p. 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15939

Trans. of *Akad[emiya] Nauk SSSR. Otdel[eniye] Khim-[icheskikh] Nauk. Izvest[iya] 1957 [no. 5] p. 652-653.
Another translation is available in French from LC or SLA mi$1.80, ph$1.80 as CEA-tr-R365, 10 May 58, [4]p.

Tributylboron was an extremely active polymerization catalyst for methyl methacrylate and styrene and a slightly active polymerization catalyst for acrylonitrile. The addition of 2 mol-% tributylboron to methyl methacrylate led to the rapid polymerization of methyl methacrylate, an accompanying increase of temperature, and the formation of a hard-set block in 1 to 1.5 hr. The yield of polymethyl methacrylate in 3 hr was about 60% when methyl methacrylate was polymerized in the presence of 2 mol-% tributylboron in toluene at 60°C; under the same conditions but without a catalyst, only 3% polymethyl methacrylate was formed. Polymerization of styrene under the same conditions produced about 20% polystyrene in the presence of the catalyst; only traces were formed when the catalyst was not present. Polymerizations were in sealed ampules. Air was not removed from the gas phase for styrene polymerizations, but for methyl methacrylate the air was displaced by oxygen-free nitrogen. Polymerization of acrylonitrile in the presence of tributylboron in toluene required an activator, BF_3 etherate, as reported previously (59-15969).

Krönig, Walter.
THE POTT-BROCHE PROCESS, tr. by E. H. Reichl and G. P. Schuck-Kolben. 11 Dec 58, 6p. (1 table 1 flow sheet omitted).
Order from SLA mi$1.80, ph$1.80 59-10192

Trans. of mono. The Catalytic Pressure Hydrogenation of Coals, Tars, and Mineral Oils, Berlin/Göttingen/Heidelberg, 1950, p. 92-97.

The advantages of the Pott-Broche process for production of fuels from coal over the previous used methods, which were commercially unsatisfactory, are discussed. The method itself is briefly described.

Ludewig, H., Ramm, H., and Wiegand, K.
PREPARATION AND POLYCONDENSATION OF p-HYDROXYMETHYL-BENZOIC ACID. [1959] 10p.
Order from ATS $9.95 ATS-68L30G

Trans. of J[ournal für] Prakt[ische] Chem[ie] (East Germany) 1958, ser. 4, v. 6, p. 103-114.

Mil'man, B. S., Il'icheva, L. V. and Studnits, M. A.
DESULFURIZATION OF LIQUID CUPOLA IRON BY MAGNESIUM [O Desul'furatsii Chuguna Magniyem]. May 59, 1500 words.
Order from HB $4.25 HB-4518

Trans. of Liteynoye Proizvodstvo (USSR) 1958, no. 11, p. 15-17.

The theory on the inefficiency of liquid cast iron desulfurization by treating it with magnesium is rejected, and it is proved that all the sulfur, bound with magnesium into magnesium sulfides or more complex compounds, passes from the metal into the slag and partially into the upper layers of the cast metal. It is concluded that a particularly careful separation of the slag, formed after addition of magnesium, from the liquid metal is necessary to ensure a full desulfurization, which is independent of the subsequent heating.

Miyazaki, S. and Takahashi, S.
CHEMICAL REACTIONS IN A HIGH-FREQUENCY ELECTRIC DISCHARGE. PART VIII. FORMATION OF HYDROGEN CYANIDE FROM METHANE AND AMMONIA. [1959] 6p.
Order from ATS $10.80 ATS-77L30J

Trans. of [Nihon] Kagaku Zasshi (Japan) 1958, v. 79, no. 2, p. 135-137.

Miyazaki, S. and Takahashi, S.
CHEMICAL REACTIONS IN A HIGH-FREQUENCY ELECTRIC DISCHARGE. PART IX. FORMATION OF HYDROGEN CYANIDE BY THE REACTION OF METHANE, NITROGEN AND HYDROGEN. [1959] 6p.
Order from ATS $9.85 ATS-78L30J

Trans. of [Nihon] Kagaku Zasshi (Japan) 1958, v. 79, no. 2, p. 138-142.

Natta, G., Pino, P. and others.
TITANIUM- AND ALUMINUM-CONTAINING CRYSTALLIZABLE COMPLEXES POSSESSING CATALYTIC ACTIVITY IN THE POLYMERIZATION OF ETHYLENE. [1958] 8p.
Order from ATS $9.50 ATS-51L29I

Trans. of J[ournal of] Inorg[anic] & Nuclear Chem[istry] (Gt. Brit.) 1958, v. 8, p. 612-619.

Natta, G., Pino, P. and others.
THE USE OF DICYCLOPENTADIENE DERIVATIVES OF TITANIUM FOR THE STUDY OF CATALYSTS FOR ETHYLENE POLYMERIZATION UNDER LOW PRESSURE. [17 Apr 59] 19 refs.
Order from RIS $16.00 RIS rept. 96964

Trans. of la Chimica e l'Industria (Italy) 1957, v. 39, p. 19-20.

Experiments on ethylene polymerization with catalysts prepared on the basis of titanium dicyclopentadiene compounds indicate that the titanium-organic bonds of the Ti-C_6H_5 type contained in $(C_5H_5)_2Ti(C_6H_5)_2$ do not themselves promote ethylene polymerization. Among the terminal groups present in the polymer chains, there are the organic groups which were initially linked to the aluminum in the aluminum-organic compound used for the preparation of the catalyst. No groups initially linked to the titanium are found, however. The results obtained favor the hypothesis that the catalyst is formed by a complex containing the $Ti(C_5H_5)_2$ and Al-R groups, where R represents the organic group linked to the aluminum in the organic starting compound. Each polymer chain is assumed to grow by the introduction of ethylene molecules between an aluminum atom and the growing chain.

Orita, Kenichi, Ito, Hisao, and Kawata, Yuzuro.
MOISTURE-RESISTANCE TREATMENT OF HYGROSCOPIC FERTILIZER SALTS. [1959] [8]p.
Order from LC or SLA mi$1.80, ph$1.80 59-15367

Trans. of Japanese patent application 3406, 13 Oct 50, appl. 28 Mar 49, special appl. 2915 in 1949 by foundation, Noguchi Kenkyu-jo, Tokyo.

The characteristic of this method of moisture-resistance treatment of hygroscopic fertilizer salts lies in creating a coating of acid oil furfural resin, or a similar substance composed chiefly of acid oil furfural resin, on the crystal surface of hygroscopic fertilizer salts. The objectives are to simplify handling of hygroscopic fertilizers, which require involved treatment in wrappage and transportation, by preventing deliquescence; and to enable inexpensive marketing of fertilizers of this type which are easy to use and safe in fertilizing activity.

Peters, W[erner].
RAPID DEVOLATILIZATION AS A FUNCTION OF TIME. [1959] [26]p. (3 photo. illus. omitted) 7 refs.
Order from SLA mi$2.70, ph$4.80 59-15064

Trans. of [GWF]; das Gas- und Wasserfach (West Germany) 1957, v. 98, no. 21, p. 517-524.

The rapid devolatilization process is experimentally studied, which takes place spontaneously when finely grained fuel, particularly bituminous coal dust, is admixed with intensive agitation to hot fine-grained heat carriers (sic). The devolatilization curves are linear until the major portion of the substance is devolatilized. This means that the gas production per unit time is constant, and is a function of the concentration of the unused substance. The course of rapid devolatilization accordingly is governed by a process of zero magnitude, which presumably is not activated. A modified metaplastic theory is developed which presupposes a primary bitumen with a well-defined evaporation temperature. The significance of rapid devolatilization resides in the recovery of high molecular products, by interrupting the secondary cracking process in the vapor phase early enough. (See also 59-10852).

Peters, W[erner].
YIELDS FROM RAPID DEVOLATILIZATION. [1950] [37]p. (2 figs. omitted) 9 refs.
Order from SLA mi$3.00, ph$6.30 59-10852

Trans. of GWF; [das] Gas- u[nd] Wasserfach (West Germany) 1958, v. 99, no. 41, p. 1045-1054.

This article reports the yields measured in a continuous laboratory apparatus for rapid devolatilization; it is the continuation of a former work (technical translation 59-15064 of Gas- u. Wasserfach 98: 517, 1957) concerning rapid devolatilization as a function of time. Measured were the devolatilization products of a gas flame coal at various devolatilization temperatures between 470°C, and 950°C, and those of six other coals of various coalification stages, at an LTC temperature of 600°C. The yields differ considerably from those of an LTC retort, as was to be expected according to an earlier hypothesis, that the primary process of devolatilization is an evaporation.

Pfleiderer, H.
CADMIUM VERMILION: A NEW CLASS OF PIGMENTS. [1959] [5]p. (7 figs. omitted).
Order from SLA mi$1.80, ph$1.80 59-15653

Trans. of Fette Seifen Anstrichmittel (West Germany) 1956, v. 58 [no. 12] p. 1073-1076.

Properties of these pigments, varying from light orange till darkest marron, are described. In the light of radiograms, the most probable structure is discussed.

Siefken, Werner.
MONOISOCYANATES AND POLYISOCYANATES. Communication IV on Polyurethanes. [1959] 69p. 73 refs.
Order from SLA mi$3.90, ph$10.80 59-15983

Trans. of [Justus] Liebigs Annalen [der Chemie] (Germany) 1949, v. 562 [no. 2] p. 75-109.

The processes discovered and developed in past years within the scope of the former I. G. Farbenindustrie for the preparation of isocyanates are summarized.

Suida, H.
THE TECHNICAL PRODUCTION OF CONCENTRATED ACETIC ACID. [1959] [11]p.
Order from SLA mi$2.40, ph$3.30 59-10669

Trans. of Österreichische Chemiker-Zeitung (Austria) 1927 [Neue Folge] v. 30, no. 1 [p. 1-5].

Takahashi, Akira and Yamazaki, Isamu.
POTASSIUM PERSULPHATE-SODIUM BISULPHITE REDOX SYSTEM POLYMERIZATION. Rept. no. 5 on Study of Acrylonitrile Polymerization. [1959] 12p. 5 refs.
Order from SLA mi$2.40, ph$3.30 59-15791

Trans. of [Kōbunshi Kagaku] (Japan) 1957, v. 14, no. 144, p. 191-195.

The relation was experimentally determined between the monomer consuption velocity and the concentrations in the aqueous polymer emulsion of (1) sodium bisulfite and (2) potassium persulfate KPS. With an increase in the concentration of sodium bisulfite the average degree of polymerization becomes quite small, and if the critical concentration is exceeded, it either becomes invariable or appears to increase to some extent. With an increase in KPS the monomer consumption velocity first increases but gradually an excess, which gives rise to free radicals, brings about a deactivation reaction. Raising the KPS concentration further, instead of increasing the velocity, seems to decrease it. (See also 59-15268)

Takahashi, Akira and Yamazaki, Isamu.
POTASSIUM PERSULPHATE-SODIUM BISULPHITE-POTASSIUM THIOCYANATE REDOX SYSTEM POLYMERIZATION. Rept. no. 10 on Study of Acrylonitrile Polymerization. [1959] 10p. 1 ref.
Order from SLA mi$1.80, ph$1.80 59-15267

Trans. of Kōbunshi Kagaku (Japan) 1957, v. 14 [no. 147] p. 363-366.

Low degree polymers were obtained by using a $K_2S_2O_8$-$NaHSO_3$-KCNS redox system without slowing down the rate of monomer consumption. In the research on acrylonitrile it was found that after a certain time the monomer consumption velocity abruptly decreases to a small constant velocity. After this bending point additions of $NaHSO_3$ increase the velocity markedly while KCNS will affect the average degree of polymerization. The maximum yield ratio was present in the vicinity of 40°C.

Tix, A., Bandel, G. and others.
EXPERIENCE WITH VACUUM STREAM DEGASSING STEEL.
May 59, 3900 words.
Order from HB $7.80 HB-4605

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 8, p. 472-477.

Further experience gained on 78,000 m. tons of vacuum-cast steel for high-grade heavy forgings such as rotors, turbine shafts, and steel castings, since author's earlier report in 1955. Results of new experiments. Hydrogen content of liquid open-hearth and electric furnace steels reduced by stream degassing. Application of vacuum treatment to steels for rolled semiproducts, and flake-sensitive rails having a minimum tensile strength of 128,000 psi without a slow cool. Reduction of oxygen content and more uniform distribution of oxygen in vacuum-poured ingots of carbon and alloy steel. Further experiences in improvement of properties particularly avoidance of flake formation, minimizing streaks of segregate and overall inclusion content. (See 59-18048) (HB abstract)

Tomita, Masao, Uyeo, Shojiro and others.
SYNTHESES OF PYRIMIDINE DERIVATIVES. I. SYNTHESIS OF α-ALKOXYMETHYLENE-β-ALKOXYPROPIONITRILES. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 59-15380

Trans. of [Yakugaku Zasshi] (Japan) 1954, v. 74, p. 742-746.

The method of Chelinstev (Chem. Abstr. 40: 4069, 1946) of condensing α-acetoxymethylene-β-ethoxypropionitrile with acetamidine was improved by using an anhydrous solvent which increases the yield.

Tselikov, V. K.
EFFECT OF HEAT TREATING ON TEMPERATURE VS. IMPACT STRENGTH CURVE [Vliyaniye Termicheskoy Obrabotki na Izmeneniye Temperaturnoy Krivoy Udarnoy Vyazkosti Stali]. May 59, 1500 words.
Order from HB $4.40 HB-4390

Trans. of Metallovedeniye i [Termicheskaya] Obrabotka Metallov (USSR) 1958, no. 10, p. 17-22.

Study of change of temperature against impact strength curve with varying conditions of heat treating, and of effect of the structural factor on the temperature variation of impact strength, based on micrographic analyses and impact tests. Steels studied: 0.10% C, 3.6 Ni; and 0.12% C, 0.97 Cr, 3.1 Ni. Effect of heating above Ac_3 and of heat treating between Ac_1 and Ac_3 on the temperature vs. impact strength curves. Effect of strain hardening and aging, and of temper brittleness of steels upon temp. vs. impact curve. (HB abstract)

Weber, J.
FORMATION OF STEAM FROM WASTE HEAT AND EFFICIENCY OF DUST REMOVAL FROM THE CONVERTER WASTE GASES OF A WATER-COOLED CONVERTER STACK BY CYCLONES. [1959].
Order from BISI $ 3 BISITS 1294

Trans. of Stahl u[nd] Eisen (West Germany) 1959 [v. 79] 5 Mar, p. 291-294.

Ziegler, Karl.
NEW DEVELOPMENTS IN ORGANOMETALLIC SYNTHESIS. [1959] 38p. 78 refs.
Order from SLA mi$3.00, ph$6.30 59-15975

Trans. of Angewandte Chemie (West Germany) 1956 [v. 68, no. 23] p. 721-729.

The Chemistry of the organometallic compounds has shown decisive advances about every 25 years. After the introduction of magnesium in organic synthesis in 1900, lithium and aluminum followed. The following items are discussed separately: The addition of metal alkyls to ethylene, the interactions between metal hydrides and olefins, the preparation of aluminum alkyls and their reactions with higher olefins, introduction of functional groups, the transformations of aluminum with triple bonds as well as the aluminum-organic synthesis of bifunctional compounds.

Ziegler, Karl.
THE PATH OF THE METAL ALKYLS FROM THE LABORATORY TO PETROCHEMICAL TECHNOLOGY. [1959] 24p. 53 refs.
Order from SLA mi$2.70, ph$4.80 59-15055

Trans. of unidentified German mono.

The development of metal alkyls as catalysts in the petroleum industry is traced in a speech delivered at Goslar on Sept. 30, 1958, at the presentation of the Carl Engler medal.

Civil Engineering

GIDROTEKHNICHESKOYE STROITEL'STVO (USSR) 1959 [V. 28] (Hydraulic Engineering Construction).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 3, p. 1-65, PB 141 091T-15
No. 4, p. 1-65, PB 141 091T-14

Consists of abstracts in English.

HOUSING CONDITIONS OF RAILROAD WORKERS IN THE USSR. 15 May 59 [27]p. 92 refs. AF 1255807.
Order from LC or SLA mi$2.70, ph$4.80 59-16480

Trans. from Soviet open sources, 1950-1959.

Separate descriptions are given of dwelling construction on the Ufa, South-Urals, Kuybyshev, Volga, Southeastern, North-Caucasus, Ordzhonikidze, Azerbaydzhan, Transcaucasian and Orenburg systems.

TSEMENT (USSR) 1959, [V. 25] NO. 1, P. 1-32 (Cement). [1959] [12]p. SOV-101-59-1-(1-10)/10.
Order from OTS $0.50, $3.00/year PB 141 094T-6
Foreign $0.75, $4.50/year

Consists of abstracts in English.

Electrical and Electronic Engineering

ANTENNAS IN THE USSR. 23 Apr 59 [52]p. (60 figs. omitted) 131 refs. AF 1255705.
Order from LC or SLA mi$3.60, ph$9.30 59-16436

Trans. from Soviet open sources, 1950-1959.

The antennas described are classified according to the Soviet classification system, i.e., by wavelength (long, medium, short, and ultra-short waves). The design features and principles of antenna operation are given in general terms. Although many of the antennas are similar to those used in the USA, some types, generally designed for multi-purposes, are distinctly Soviet developments. By applying wide-band techniques the Soviets have developed an antenna system, using a microwave type of transmission, that can handle TV simultaneously with many telephone channels.

*AVTOMATIKA I TELEMEKHANIKA (USSR) 1958, V. 19, NO. 11, P. 997-1076 (Automatics and Telemechanics). [1959] [13]p. SOV-103-19-11-(1-10)/10.
Order from OTS $0.50, $3.00/6 mo. PB 141 096T-12
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

*ELEKTRICHESTVO (USSR) 1959, NO. 1, P. 1-95 (Electricity). [1959] 1v. SOV-105-59-1-(1-29)/29.
Order from OTS $0.80, $4.50/6 mo. PB 141 098T-11
Foreign $1.05, $6.00/6 mo.

Consists of abstracts in English.

*ELEKTROSVYAZ' (USSR) 1958, 1959 (Electrical Communications).
Order from OTS $0.60, $3.50/6 mo.
Foreign $0.85, $5.00/6 mo.

1958, v. 12, no. 12, p. 3-76, PB 141 099T-11
1959, v. 13, no. 2, p. 3-80, PB 141 099T-10

PROMYSHLENNAYA ENERGETIKA (USSR) 1958 [V. 13] NO. 12, P. 1-40 (Industrial Power Engineering). [1959] [22]p. SOV-94-58-12-(1-19)/19.
Order from OTS $0.60, $3.50/6 mo. PB 141 087T-9
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

RADIO [MOSCOW] (USSR) 1958, 1959 (Radio).
Order from OTS $0.50, $6.00/year

1958, no. 12, p. 1-64, PB 141 104T-11
1959, no. 1, p. 1-64, PB 141 104T-12

Consists of abstracts in English.

*RADIOTEKHNIKA I ELEKTRONIKA (USSR) 1959, V. 4 (Radio Engineering and Electronics).
Order from OTS $0.70, $4.00/6 mo.
Foreign $0.95, $5.50/6 mo.

No. 1, p. 3-149, PB 141 106T-12
No. 2, p. 155-348, PB 141 106T-13

Consists of abstracts in English.

REFERATIVNYY ZHURNAL. ELEKTROTEKHNIKA (USSR) 1958, NO. 3, P. 7-159 (Journal of Abstracts. Electrical Engineering). [1959] 1v. SOV-112-58-3-(3590-4509).
Order from OTS $1.40, $7.50/6 mo. PB 141 109T-3
Foreign $1.65, $9.00/6 mo.

Complete translations of those entries which were originally published in the USSR, excluding those abstracted elsewhere.

THE SOVIET RADIO OPERATIONS MONITORING SYSTEM: ORGANIZATION AND OPERATION.
25 Mar 59 [14]p. 16 refs. AF 1255650.
Order from LC or SLA mi$2.40, ph$3.30 59-16464

Trans. from Soviet open sources, 1946-1958.

USSR ELECTRONIC AND PRECISION EQUIPMENT [NO. 9, 14 May 59]. [1959] [48]p. 163 refs.
Order from LC or SLA mi$3.30, ph$7.80 59-18110

Trans. of unevaluated information selected from Russian-Language publications.

A description is given of electronic and precision equipment manufactured in the USSR. The plants responsible for various phases of manufacture are given and evaluations are made of the present system of production. New products, particularly for consumer use, have been curtailed by red tape and a lack of materials. (See also 59-16991)

USSR ELECTRONIC AND PRECISION EQUIPMENT [NO. 11, 1 JULY 59]. [1959] [31]p. 94 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-18400

Trans. of unevaluated information selected from Russian-language publications.

Contents:
Items of special interest
  Plants
  Batteries
  Tungsten filament drawing machine
Institutes
  Scientific Research Institute for the Automation of Production Processes in the Chemical Industry and Nonferrous Metallurgy
  Central Scientific Research Institute for Over-All Automation
  Branch of the All-Union Scientific Research Institute of the Electrical Industry at the Armelektro Plant
  All-Union Scientific Research Institute of Electrical Measuring Instruments
Local production and organization
  RSFSR
  Ukrainian SSR
  Transcaucasus Republics
  Baltic Republics
Electronic equipment
  Plant information
  Prices
  Radios
  Television
  Anti-interference research
  Microphone
  Telephone equipment
Computers
Instruments
  Electrical instruments
  Geophysical apparatus
  Industrial instrumentation
  Pipeline instruments
Precision machinery
  Cameras and lenses
  Motion-picture equipment
  Watchmaking industry
  Test equipment
  Firearms
Electrical products
  Cable
  Fixtures
  Switching apparatus
  Other equipment

VESTNIK ELEKTROPROMYSHLENNOSTI (USSR) 1959, V.[30] NO. 2, P. 1-80 (Herald of the Electrical Industry). [1959] 1v. SOV-110-59-2-(1-21)/21.
Order from OTS $0.70, $4.00/6 mo. PB 141 107T-11
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

VESTNIK SVYAZI (USSR) 1959 (Herald of Communications).
Order from OTS $0.60, $3.50/6 mo.
Foreign $0.85, $5.00/6 mo.

No. 3, p. 1-42, PB 141 108T-14
No. 4, p. 1-32, PB 141 108T-15

Consists of abstracts in English.

Andrzejewski, Stanislaw
ECONOMY OF ELECTRIC POWER GENERATED IN INDUSTRIAL PLANTS. 10 Nov 58, 13p. JPRS(NY) rept. no. 831.
Order from OTS $0.50 PB 141 325T

Trans. of Przeglad Elektrotechniczny (Poland) 1958, v. 34, no. 2/3, p. 89-92.

Contents: Cost analysis of the generation of electric power; A high power demand of a very cheap industrial plant-produced waste fuel as the condition for the profitability of installing condensing turbine units in industrial power stations; A high consumption of low-parameter steam and a high usability factor are the conditions for the profitability of power generation in the combined heat-electric svstems.

Ch'en, Fang-yun
VIEWS ON DEVELOPMENT OF RADIOELECTRONICS IN CHINA. 21 Jan 59, 13p. JPRS L-502-N.
Order from OTS $0.50 59-13064

Trans. of K'o hsueh T'ung pao (Chinese People's Republic) 1956, March, p. 37-41.

The invention of radio is attributed to the Russian physicist Popov (Po-po-fu) in 1895 and the proposal is made that knowledge should be sought from the Soviet Union.

Davlianidze, V.
THE RTU TELEVISION REPORTING OUTFIT. 20 May 59, 2p. JPRS: L-788-N.
Order from OTS $0.50 59-13531

Trans. of Radio, Moscow (USSR) 1958, no. 11, p. 17.

A lightweight, partly transistorized reporting outfit, consisting of a portable television transmitter and a stationary receiving unit, is being tested at the Leningrad Television Center. The 19.5-kg transmitter is operated by two men. The antenna of the receiving unit is placed in a directly visible range, such as on a nearby tall building. A 500-line-resolution picture is produced by the RTU reporting outfit.

Fabierkiewicz, Zbigniew and Kizewski, Piotr
UTILIZATION OF EXISTING SYSTEMS FOR OPERATION AT HIGHER VOLTAGES. 20 Nov 58, 18p. (2 figs. omitted) JPRS(NY) rept. no. 837.
Order from OTS $0.50 59-11090

Trans. of Przeglad Elektrotechniczny (Poland) 1958, v. 34, no. 2/3, p. 128-133.

The point of departure is assumed here to be a reduced network insulation level, with an effectively grounded zero point.

Fang, Nai-cheng
CHARACTERISTICS OF SELF-MADE SMALL PULSE TRANSFORMER. 17 Apr 59, 3p. (4 figs. omitted) 3 refs. JPRS: 659-D.
Order from OTS $0.50 59-11511

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1957, no. 9, p. 279-280.

Frölling, H. E.
BANDWIDTH AND EFFICIENCY OF SHORT ANTENNA SYSTEMS ($h < \lambda/10$). [1958] 49p.
Order from SLA mi$3.30, ph$7.80 59-10630

Trans. of Frequenz (Germany) 1958, v. 12, no. 9, p. 273-284.

The antenna system is determined which is most favorable with respect to the bandwidth of the radiated field and with respect to efficiency. Linear, folded and loop antennas of different diameter, with and without top-capacitor, were examined, both as omnidirective individual antennas and as directional, radiation-coupled antenna systems. Formulas are derived for calculating the bandwidth in accordance with the more accurate method of changing the impedance upon tuning out of resonance, and in accordance with the direct method which in most cases is sufficient. The bandwidth of a short antenna can be increased by increasing the diameter of the vertical part of the antenna only if the top capacitance is increased up to a given limit value which is related to the wave impedance of the antenna. Further increase in the top capacitance above this limit value no longer results in any increase in the band width. Radiation-coupling in the case of short antenna systems changes the bandwidth and efficiency only relatively slightly. Folded antennas do not result in any advantages over linear antennas with respect to bandwidth and efficiency when the external dimensions are the same. Frame-like structures, the arms of which are set in phase opposition as in the case of loop antennas, have the smallest bandwidth and the poorest efficiency of all the svstems examined.

Kharkevich, A. D.
MULTISTAGE SYNTHESIS OF NON-BLOCKING SWITCHING CIRCUITS. [1959] 8p. 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15719

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1957, v. 112, no. 6, p. 1043-1046.

A general method of synthesizing nonblocking switching systems and recurrent relationships is given which permits an evaluation of the switching system in accordance with the number of crosspoints.

Koykov, S. N. and Tsikin, A. N.
THE ELECTRICAL STABILITY OF THIN LAYERS OF ALUMINUM OXIDE. [1959] 13p. (6 figs. omitted) 12 refs.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-2883

Trans. of *Zhurnal Tekhnicheskoy Fiziki (USSR) 1956, v. 26, no. 10, p. 2248-2253.

Electrical stability of thin layers (10μ to 130μ thick) of aluminum oxide deposited on a tungsten filament or a molybdenum ribbon was tested from 300° to 2000° K in air and in a vacuum of 10^{-5} to 10^{-6} mm of Hg. Direct current was used. Breakdown voltage depended on the thickness of the coating, the temperature, and the medium. Results indicate that breakdown of aluminum oxide layers under normal atmospheric conditions is caused by breakdown of the air in the pores of the layer.

Merkylov, A. A.
RESISTANCES MADE FROM MANGANIN MICRO-WIRE IN GLASS INSULATION. [1959] [4]p.
Order from LC or SLA mi$1.80, ph$1.80 59-15866

Trans. of Vestnik Elektropromyshlennosti (USSR) 1958, [v. 29] no. 1, p. 32-34.

Discussions are presented on: (1) the design and technology of the manufacture of resistors, (2) their reliability, (3) the temperature error of the wire, and (4) the influence of external conditions on the conductivity of the resistors.

Li, Tsai-ning
HOW FORWARD LEAPS WERE ACCOMPLISHED AT THE LABORATORY OF SEMICONDUCTORS, INSTITUTE OF APPLIED PHYSICS, ACADEMIA SINICA. 13 Apr 59, 5p. JPRS: 1479-N.
Order from OTS $0.50 59-13424

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1958, no. 18, p. 555-556.

The accomplishments which are cited are attributed to the Double-Anti Movement and the Rectification Movement.

Nechayev, G. K.
TEMPERATURE MEASUREMENT WITH THERMISTORS IN SERIES (Izmereniya Temperatury Seriynymi Termosoprotivleniyami). July 57, 4p. 4 refs. C. T. S. no. 320.
Order from LC or SLA mi$1.80, ph$1.80 59-14180

Trans. of Elektrichestvo (USSR) 1956, no. 4, p. 65-67.

A two-step method for correcting the temperature characteristics of thermistors is described, which makes it possible to utilize a large proportion of a batch of thermistors with a single nominal value. Thermistor pairs with extremely small scatter in over-all characteristics may be obtained by making the preliminary choice of pairs at a temperature corresponding to the middle of the working range. A method for including the additional resistances is proposed which overcomes the problem of head interchangeability.

Penin, N. A. and Cherkas, K. V.
INFLUENCE OF RECOMBINATION AT THE NON-RECTIFYING ELECTRODE ON THE PROPERTIES OF ALLOYED GERMANIUM DIODES. 1 Apr 59, 11p. 7 refs. TP-29.
Order from LC or SLA mi$2.40, ph$3.30 59-14736

Trans. of *Radiotekh[nika] i Elektr[onika] (USSR) 1958, v. 3, no. 12, p. 1495-1500.

An experimental investigation is described of the influence of the recombination rate at the second (non-rectifying) electrode on the basic properties of alloyed germanium diodes. Results show that an increase in the recombination rate at the second electrode of diodes with a thin base causes a reduction in the frequency dependence of the capacitance and impedance of the diode, a decrease in the magnitude of the diffusion capacitance and an increase in the saturation current. The estimated magnitude of the effective recombination rate $S \approx 600$ to 800 cm/sec for tin electrodes and $S \approx 5 \cdot 10^3$ to 10^4 cm/sec for copper electrodes. The experimental results are in satisfactory agreement with the theory of the rectifying properties of diodes with a thin base.

Petrovich, N. T.
INTERFERENCE-IMMUNITY OF THE RECEPTION OF PHASE-MANIPULATED SIGNALS BY THE METHOD OF PHASE COMPARISON OF ADJACENT MESSAGES, tr. by Morris D. Friedman. 4 May 59, 9p. 6 refs. TP-30.
Order from LC or SLA mi$1.80, ph$1.80 59-16558

Trans. of Nauchn[yye] Dokl[ady] Vyssh[ey] Shkol[y]. Radiotekh[nika] i Elektr[onika] (USSR) 1958, no. 2, p. 13-19.

The probability of distortion of signals during phase manipulation is calculated for Gaussian interference in the case of reception by using a local coherent heterodyne and by using the received signal, stored in the receiver and supplied to the phase detector shifted by one message element, as the coherent voltage.

Przyluski, Andrzej, Siemaszko, Henryk, and Skoczynski, Zygmunt.
CRITICAL VOLTAGE LEVELS AS THE CRITERION FOR PLANNING POWER SYSTEMS. 18 Nov 58, 16p. (12 figs. omitted) 8 refs. JPRS(NY) rept. no. 836.
Order from OTS $0.50 59-11074

Trans. of Przeglad Elektrotechniczny (Poland) 1958, v. 34, no. 2/3, p. 121-127.

Contents: The problem of critical voltage levels for the so-called minimum permissible voltage at a given network point, seen from the viewpoint of transient-state equilibrium; Examination of the steady-state equilibrium in the light of the dQ/dU criterion; The performance curves of Q = f(U) permitting the determination of critical voltage, and the influence of a number of factors on the shape of these curves; The method of analyzer designation of critical voltage levels; Analysis of critical voltage levels in the Polish national 110-kilovolt network.

Rolf, E.
PROGRESS IN THE FIELD OF THE CONTACT RECTIFIER (Fortschritte auf dem Gebiete des Kontaktumformers). [1959] [66]p. 5 refs.
Order from SLA mi$3.90, ph$10.80 59-10786

Trans. of Frequenz (Germany) 1947, v. 1, no. 1, p. 2-15.

Seidel, Stefen
NEED AND POSSIBILITY OF EMPLOYING SERIES CAPACITORS IN POLISH HIGH AND VERY HIGH VOLTAGE SYSTEMS. 7 Nov 58, 10p. JPRS (NY) rept. no. 838.
Order from OTS $0.50 59-11023

Trans. of Przeglad Elektrotechniczny (Poland) 1958, v. 34, no. 2/3, p. 133-136.

Svenson, A. N.
APPARATUS FOR DETERMINING THE OPTIMUM OPERATING CONDITIONS OF PHOTOMULTIPLIERS (Ustanovka dlya Opredeleniya Optimal'nogo Rezhima Fotoumnozhiteley) tr. by G. M. Gordon. 1959 [4]p. 2 refs. NRL Trans. no. 722.
Order from OTS $0.50 59-11957

Trans. of *Pribory i Tekhnika Eksperimenta (USSR) 1958, no. 2, p. 103-104.

Apparatus is described for obtaining the characteristics of photomultipliers, in which pulse modulation of a light is replaced by modulation of the photomultiplier electron current. This allows the measuring apparatus to be substantially simplified by eliminating from it the Kerr cell.

Teszner, S.
THE TECNETRON, tr. by M. H. S. Brown. Oct 58, [11]p. Library Trans. no. 777.
Order from SLA mi$2.40, ph$3.30 59-10294

Trans. of mono. Le Tecnetron, France, 1958.

An account is given of the theory underlying the production of this new germanium-indium semiconductor amplifier oscillator. The method of construction and the main properties are discussed, together with possible applications. Qualitatively, the characteristics resemble those of a good pentode, though quantitatively they are somewhat different.

Veenemans, C. F.
ELECTRON EMISSION FROM OXIDE COATED CATHODES. [1959] 24p. 37 refs.
Order from SLA mi$2.70, ph$4.80 59-10856

Trans. of Nederlands Tijdschrift voor Natuurkunde, 1943, v. 10, no. 1, p. 1-16.

Yarmol'chuk, G. G.
CONTACTLESS DETERMINATION OF SPECIFIC ELECTRICAL RESISTANCE (Beskontaktnyy Metod Opredeleniya Udel'nogo Elektricheskogo Soprotivleniya) tr. by E. H. [1959] 16p. (8 figs. omitted) 7 refs. H-2056B.
Order from OTS $0.50 59-11959

Trans. of Avtomatika i Telemekhanika (USSR) 1958, v. 19, no. 3, p. 257-267.

Yaroshevich, V. M.
CONFERENCE ON THE UTILISATION OF NEW ELECTRICAL INSULATION MATERIALS AND PRODUCTION PROCESSES. [1959] 5p.
Order from LC or SLA mi$1.80, ph$1.80 59-15865

Trans. of Vestnik Elektropromyshlennosti, 1958 [v. 29] no. 6, p. 77-80.

Topics are noted of the papers read at the conference organized by the Scientific-Technical Society of the Electrical Industry and held in Leningrad in December 1957.

Zielinski, Edmund.
UTILIZATION OF FUELS FOR POWER GENERATION AND TECHNOLOGICAL PURPOSES. 31 Oct 58, 18p. 12 refs. JPRS(NY) rept. no. 856.
Order from OTS $0.50 59-11002

Trans. of Przeglad Elektrotechniczny (Poland) 1958, v. 34, no. 2/3, p. 188-192.

Contents: "Energotechnology" as a new branch of engineering sciences; Application of energotechnological methods; Products of omnilateral utilization of coal; Influence on the general balance sheet of fuels; Economic results; Coordinated urban networks and reform of heating industry; Influence on the configuration of power systems; Technical coordination of fuel-carbonizing facilities with boiler fireboxes. Regulation of power station operations.

Mechanical Engineering

ENERGETIK (USSR) 1959, NO. 3, P. 1-40 (Power Engineer). [1959] 19p. SOV-91-59-3-(1-22)/22.
Order from OTS $0.60, $3.60/6 mo. PB 141 084T-15
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

TEPLOENERGETIKA (USSR) 1959 [V. 6] (Heat Power Engineering).
Order from OTS $0.70, $4.00/6 mo.
Foreign $0.95, $5.50/6 mo.

No. 2, p. 3-96, PB 141 089T-13
No. 3, p. 3-96, PB 141 089T-14

Consists of abstracts in English.

Colomb, P.
ON A CASE OF BIOLOGICAL CORROSION OF HYDROELECTRIC PLANTS IN AFRICA AND ON THE EFFECT OF ORGANIC PRODUCTS IN THIS CORROSION PROCESS. [1958] 9p.
Order from SLA mi$1.80, ph$1.80 59-10954

Trahs. of Corrosion et Anticorrosion (France) 1957 [v. 5, no. 5] p. 153-155.

The poor keeping quality of standard bituminous coatings of high pressure pipes in some overseas territories (in this case Belgian Congo) is discussed and an explanation is attempted. Apart from the corrosive effect of water, ample deposits of slime must be taken into account. Because none of the microorganisms known heretofore for their corrosive effect have been found in these slime deposits, their deleterious effect is attributed to the presence of amino acids and amino bases as revealed by chemical and chromatographic analyses. The unexpected resistance of certain paints with a red lead base also could be explained.

Ordnance, Missiles, and Satellite Vehicles

BULLETIN OF ARTIFICIAL EARTH SATELLITE OPTICAL OBSERVATION STATIONS, 1958, NO. 1. Selected translations from Soviet-bloc International Geophysical Year Literature. 22 June 59, 68p. (1 illus. omitted) 32 refs. JPRS: 773-D.
Order from OTS $1.75 59-11665

Trans. of [Byulleten' Stantsiy Opticheskogo Nablyudeniya Iskusstvennykh Sputnikov Zemli] (USSR) 1958, no. 1.

Articles are presented on (1) a graphic method of computing visibility conditions of the first American satellite (1958€) having an orbit which can be observed from Soviet territory; (2) the "polar point" method for rapid calculation of the visibility of artificial earth satellites (AES); (3) the work of Ryazan' station on the modernization of the AT-1 astronomical telescope used in determining horizontal coordinates of AES, (4) comparisons of AES observations made with ShT-1 theodolites and AT-1 telescopes; (5) results of AES photographic observations made at the astronomical observatory of Kiev State University, the Tartu Astronomical Observatory of the Academy of Sciences of the Estonian SSR, the Riga State University, and the Stalinabad Institute of Astrophysics of the Academy of Sciences of Tadzhik SSR; (6) observations of AES by Soviet stations; and (7) observations of AES by non-Soviet stations.

RADIOELECTRONICS AND COSMIC FLIGHT (Radioelektronika Kosmicheskiy Polet). [1959] 8p. (1 illus. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-16157

Trans. of Radio [Moscow] (USSR) 1959, no. 2, p. 6-7.

A description for laymen is given of the launching of the Soviet moon rocket in 1959. Some of the electronic equipment contained in its nose cone and its purpose are described.

SOVIET GEOPHYSICAL ROCKETS (Sovetskiye Geofizicheskiye Rakety). 1 June 59, 2p. (6 figs. omitted) AF 1255845.
Order from LC or SLA mi$1.80, ph$1.80 59-16962

Trans. of the captions of the photocomposition in Radio [Moscow] (USSR) 1959, no. 4, insert between p. 32 and p. 33.

Sanitation and Safety Engineering

REPORT ON THE CIVIL DEFENSE IN THE USSR. 4 Apr 57 [31]p. 29 refs. AF 1092884.
Order from LC or SLA mi$3.00, ph$6.30 59-16954

Trans. from Soviet open sources 1937-1957.

An attempt is made (1) to delineate the scope of the Soviet civil defense, its organizational set-up, the manner of its implementation, and new tendencies in the defense; (2) to uncover the controls behind the Soviet civil defense organization; (3) to ascertain the role of MVD (The Ministry of the Internal Affairs) in the civil defense; (4) to discover inherent weaknesses in the system of defenses; to evaluate the effectiveness of the civil defense; and (5) to draw a comparison between the civil defense organization in the Soviet Union and in the United States. A separate chapter entitled The Place of DOSAAF in the Soviet Civil Defense is included since this organization (All-Union Voluntary Society for the Promotion of the Army, Air Force and Navy) is actively engaged in the training of the civilian population for the civil defense.

SOVIET CIVIL DEFENSE POSTERS. 11 Sep 57, 16p. (8 illus. omitted).
Order from LC or SLA mi$2.40, ph$3.30 59-18415

Trans. of Soviet Civil Defense posters pub. by DOSAAF, Moscow, 1957.

SOVIET TOURISM AS A PART OF CIVIL DEFENSE 12 July 57 [38]p. (24 figs. omitted) 20 refs. AF 1116915.
Order from LC or SLA mi$3.00, ph$6.30 59-16955

Trans. from Soviet open sources 1947-1957.

"Tourism" is the participation by civilians in activities which are of primary importance in military life. It includes arduous cycling, skiing, and target shooting. These topics are discussed: (1) relation of Soviet tourism to civil defense; (2) scope and forms of Soviet tourism; (3) governmental and party control; (4) implementation and training; (5) relation of Soviet tourism to other sports.

Braukmann.
AN ELECTRON FIRE IN AN ETCHING PLATE FACTORY. [1959] [11]p. 1 ref.
Order from SLA mi$2.40, ph$3.30 59-10255

Trans. of Oberflächentechnik (Germany) 1940, v. 17, no. 1, p. 4-6.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Delore, J. and Delore, P.
RESEARCH ON THE SPONTANEOUS OXIDATION IN OPEN AIR OF CODLIVER OIL, LINSEED OIL AND OLIVE OIL [AND] THE INFLUENCE OF PREVIOUS IRRADIATION ON THE OXIDATION IN OPEN AIR OF CODLIVER OIL LINSEED OIL AND OLIVE OIL. [1959] [9]p. (2 figs. omitted) 4 refs.
Order from SLA mi$1.80, ph$1.80 59-15844

Trans. of [Société de Biologie et de ses Filiales]. Comptes Rendus [des Séances] (France) 1928, v. 99, p. 805-810.

Hummel, Jaroslav.
BINDING OF CARBON DIOXIDE IN BEER. [1959] 6p. 14 refs.
Order from SLA mi$1.80, ph$1.80 59-15850

Trans. of Kvasny Prumysl (Czechoslovakia) 1958, no. 4, p. 79-80.

Experiments showed that previous methods for measuring the CO_2 content of beer may be affected with serious errors, since the liberation of CO_2 depends to a great extent on the quality and cleanliness of the vessels in which the beer is tested. A new method was developed for determining the CO_2 bond by foaming at 20°C under uniform conditions. After foaming, 45 to 65% of the original CO_2 was eliminated from various kinds of beer. The most decisive factor in the resorption of CO_2 was the degree of saturation. Only beers whose protein content had been intensively decreased showed a tendency toward rapid liberation of CO_2.

Täufel, Kurt and Müller, Josef.
ON THE OLEIC ACID RANCIDITY OF FATS. II. PROCEDURES FOR MEASURING THE RANCIDITY. [1959] [24]p. (4 figs. omitted) 42 refs.
Order from SLA mi$2.70, ph$4.80 59-15786

Trans. of Zeitschrift für Untersuchung der Lebensmittel (Germany) 1930, v. 60, no. 5, p. 473-484.

A critical survey of the qualitative chemical reactions for proving the existence of spoilage of a fat indicates that quantitative processes founded on this basis have only the value of approximate or conventional methods. The colorimetric measurement of the depth of color of the Kreis reaction yields results, outside the range in which disturbances are to be expected, which are relatively well reproducible in comparative investigations made under similar conditions. The process is particularly well adapted to tracing the phenomena at the beginning of spoilage. The method of obtaining the weight increase of a fat through its absorption of oxygen is less sensitive to the beginning of the spoilage than is the colorimetric method, but it permits the progress of spoilage to be followed over long periods of time. There is no simple relationship between the increase of weight on the one hand and the intensity of the Kreis color on the other hand: each of the two processes selects a certain stage or a certain disintegration substance, in a one-sided way, out of the multiplicity of chemical conversions occurring.

Vasin, A. V.
ON THE SANITARY EVALUATION OF MEAT OF POISONED ANIMALS SUBJECTED TO FORCED SLAUGHTER (O Sanitarnoy Ostsenke Myasa Vynuzhdenno Ubitykh Zhivotnykh pri Otravleniykh). 2 Apr 59, 4p. Trans. V1400.
Order from LC or SLA mi$1.80, ph$1.80 59-16144

Trans. of Veterinariya (USSR) 1958, v. 35, no. 12, p. 59-60.

Regulations are proposed for more stringent inspection of meat from animals slaughtered because of poisoning by chemicals or poisonous plants.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

EXCAVATORS MOUNTED ON "BELARUS'" TRACTORS. 12 Mar 59 [21]p. (24 figs. omitted) 11 refs. AF 1255620.
Order from LC or SLA mi$2.70, ph$4.80 59-16446

Trans. from Soviet open sources, 1955-1958.

Up to 1955 the Soviet Union did not build excavators of small capacity, e.g., with 0.15 cu m buckets. However, small excavators with good maneuverability were increasingly needed for construction work, road building, and agriculture. The present report gives an analytical survey of information from various Soviet sources, arranged in chronological order, regarding small-capacity excavating attachments for the universal "Belarus'" row-crop tractor.

USSR INDUSTRIAL EQUIPMENT (TRANSPORTATION, CONSTRUCTION, PRODUCTION, AND POWER MACHINERY) [NO. 10, 28 MAY 59]. [1959] [41]p. 114 refs.
Order from LC or SLA mi$3.30, ph$7.80 59-16991

Trans. of unevaluated information selected from Russian-language publications.

A description is given of transport, construction, production, and power machinery being produced in the USSR with an evaluation of the present techniques. New developments are described and measures to implement their production are mentioned. (See also 59-18110)

USSR INDUSTRIAL EQUIPMENT (TRANSPORTATION, CONSTRUCTION, PRODUCTION AND POWER MACHINERY) [NO. 11, 25 JUNE 59]. [1959] [31]p. 110 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-18396

Trans. of unevaluated information selected from Russian-language publications.

Equipment discussed includes (1) a new 70,000-ton capacity hydraulic die-forging press, (2) automotive equipment, (3) construction machinery such as cranes and loaders and earth-moving and road machinery, (4) production machinery such as machine tools, presses and hammers, and foundry equipment, and (5) power machinery, including turbines, generators, motors, transformers, switchgear and controls.

Gostev, V. I. and Beloyusov, A. V.
QUALITY CONTROL OF PRODUCTION IN THE MACHINE BUILDING INDUSTRY. [1959] [375]p. F-TS-9131/V.
Order from LC of SLA mi$11.10, ph$57.60 59-18094

Trans. of mono. Kontrol' Katchestva Produktsii v Mashinostroyenii, Moscow, 1955, p. 1-205 and 551-633.

This book, written for the benefit of the Technical Control Division personnel and for technicians of machine building plants, clarifies the methods of operating and organizing the basic subdivisions of the department of technical control in machine building plants, the manner by which quality control over the products is effected, beginning with the control over the quality of the raw materials entering the plant and with the intermediate control over the semifinished parts in the process of production, and ending with the control over the finished product.

Malinov, L. M.
ULTRASONIC TREATMENT OF MATERIAL (Ul'trazvuk Obrabatyvayet Materialy). July 57 [3]p. C. T. S. No. 347.
Order from LC or SLA mi$1.80, ph$1.80 59-14173

Trans. of Nauka i Zhizn' (USSR) 1956, v. 23, no. 7, p. 20.

A device for machining hard and brittle materials by ultrasonic vibration is described.

Malkin, B. M.
HIGH SPEED PNEUMATIC GRINDING SPINDLES (Vysokooborotnye Pneymaticheskiye Shlifoval'nye Shpindeli). July 57 [5]p. C. T. S. no. 349.
Order from LC or SLA mi$1.80, ph$1.80 59-14188

Trans. of Stanki i Instrument (USSR) 1956, v. 27, no. 6, p. 36-37.

Meyerov, M. V.
INTRODUCTION TO THE DYNAMICS OF AUTOMATIC CONTROL OF ELECTRICAL MACHINERY. [1959] [289]p. F-TS-9175/V.
Order from LC or SLA mi$11.10, ph$44.10 59-18096

Trans. of mono. Vvedeniye v Dinamiku Avtomaticheskogo Regulirovaniya Elektricheskikh Mashin, Moscow, 1956.

This appears to be a translation of the first seven chapters of a 17-chapter monograph designed for engineers. The chapters presented are entitled: (1) Electrical machines as objects of automatic control, (2) elements of the automatic control systems of electric machinery, (3) principles of the Laplace transformation, (4) typical links and structural diagrams, (5) problem of stability in automatic control systems of electric machinery, (6) examples of stablizing means, and (7) the quality of systems for automatic control of electrical machinery.

Rosanow, R. B.
EXPERIMENTAL INVESTIGATION OF PUMP DRIVE WITHOUT ACCUMULATORS FOR HYDRAULIC PRESSES, A. I. Simin, ed. [1959].
Order from BISI 3,5s BISITS 1250

Trans. of Russian mono. Hydraulic Presses, p. 130-141.

Tanaka, Tatsuo.
CLOSED CIRCUIT GRINDING WITH CONVENTIONAL AIR-SEPARATORS. [1959] 14p.
Order from SLA mi$2.40, ph$3.30 59-15070

Trans. of Zement-Kalk-Gips (West Germany) 1958, v. 11, no. 7, p. 298-304.

Air separators in several grinding plants in Japan were examined: general data on the efficiency of separator systems are applied to the development of a method of computation which takes into account the fact that in actual operation coarse particles are occasionally found in the fines, and that conversely small particles are found in the tailings. This method of computation has a practical significance for the installation and operation of closed circuit grinding systems.

Tanaka, Tatsuo.
PRINCIPLES OF FINENESS CONTROL IN CLOSED-CIRCUIT GRINDING. [1959] 9p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-15068

Trans. of Zement-Kalk-Gips (West Germany) 1957, v. 10, no. 10, p. 409-413.

The fineness of grinding can be regulated only if a closed grinding circuit is employed. The relationships between the different variables which are of major importance with regard to plant design or operation, such as the circuit ratio, the limiting particle size in the separator, the fineness of the oversize particles at the mill inlet and outlet, as well as of the feed material, finished material or circulating material are discussed. The results are plotted in graphs. In addition, the granulometric composition, the grading of the finished material, and the variation in fineness for increasing circuit ratio are considered.

Tanaka, Tatsuo.
THEORETICAL POSSIBILITIES FOR THE GRANULOMETRIC COMPOSITION IN CLOSED-CIRCUIT GRINDING. [1959] 5p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-15071

Trans. of Zement-Kalk-Gips (West Germany) 1958, v. 11, no. 3, p. 92-94.

Some typical closed circuit grinding systems are considered theoretically, with particular reference to the possibilities of fineness regulation.

Vladzieyevskiy, A. P.
AUTOMATIC MACHINE TOOLS (Stanki Avtomaty). Aug 57 [7]p. (4 illus. omitted). C. T. S. no. 350.
Order from LC or SLA mi$1.80, ph$1.80 59-14172

Trans. of Nauka i Zhizn' (USSR) 1956, v. 23, no. 7, p. 13-16.

Developments in the production of machine tools in the USSR are described. Reference is made to gear cutting machines, fully automatic balancing controls for machining shafts of electric motors, and experimental production lines for the manufacture of tractor engine piston rings, spur gears and spline shafts.

Engines and Propulsion Systems

RECENT WORK AT TsKTI. [1959] [3]p. 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15825

Trans. of Energomashinostroyeniye (USSR) 1958 [v. 4] no. 1, p. 48.

Brief notes are presented on recent papers concerning (1) steam boilers (2) automatic control (3) turbomachines.

SUMMARY OF PAPERS PRESENTED AT THE INTERNATIONAL CONFERENCE ON GAS TURBINES HELD BY FACULTE POLYTECHNIQUE AT MONS, BELGIUM, JUNE 4-6, 1958. [1959] 6p. A. C. S. I. L. Trans. no. 1100.
Order from SLA mi$1.80, ph$1.80 59-15007

Summary trans. of 9 papers.

Papers summarized are: (1) A study of the possibilities of the gas turbine in the industrial field, by L. R. Beduwe and A. L. Jaumotte, (2) Employment of gas turbines for the production of peak energy in the power stations of "Electricite de France", by P. Chambadal, (3) The possibilities of the gas turbine in atomic power stations, by C. Keller, (4) The gas turbine in the metallurgical industry, by E. Aguet, (5) Operating experiences with Ruston and Hornsby gas turbines, by G. B. R. Fielden, (6) The present position and future prospects concerning the use of residual fuel oils in gas turbines, by W. Tipler, (7) The development of a free piston gas generator, by R. Huber and P. Szereszewski, (8) Gas turbines of small horsepower, by J. Szydlowsky, and (9) The integration of the gas turbine into chemical processes, by F. Huber.

Feodos'yev, V. I. and Sinyarev, G. B.
INTRODUCTION TO ROCKET ENGINEERING. [1959] 378p. 27 refs.
Order from LC or SLA mi$11.10, ph$57.60 59-16775

Trans. of mono. [Vvedeniye v Raketnuyu Tekhniku] Moscow, 1956.

This book is intended for the reader who has studied college chemistry and physics and the fundamental principles of higher mathematics and theoretical mechanics, but who has not yet studied thermodynamics or aerodynamics. Chapter headings are entitled: (1) basic relations of reactive propulsion theory; (2) types of jet propulsion vehicles and fundamentals of their design; (3) types of jet propulsion engines, their design and performance features; (4) rocket engine propellants; (5) processes in the rocket engine combustion chamber; (6) flow of products of combustion through the rocket engine nozzle; (7) forces and moments acting on a rocket in flight; (8) flight path of a rocket; (9) fundamental principles of stabilization and guidance; and (10) associated ground equipment and launching devices. All references cited are Soviet.

Gel'fenbein, L. G.
THE QUEST FOR HIGHLY-EFFICIENT AND SMALL-SIZE HEAT EXCHANGERS FOR GAS TURBINE INSTALLATIONS. [1959] [9]p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15826

Trans. of Energomashinostroyeniye (USSR) 1958 [v. 4] no. 1, p. 27-30.

A series of designs of heating surfaces is discussed from the point of view of their use for highly-efficient regenerators for gas turbine installations. Methods are described and calculating formulae are suggested for the determination of the optimum ratios of the speeds of gas and air.

Naumov, V. K.
CONFERENCE ON LONG-TERM STATIC STRENGTH OF TURBO-MACHINES. [1959] [2]p.
Order from LC or SLA mi$1. 80, ph$1. 80 59-15823

Trans. of Energomashinostroyeniye (USSR) 1958 [v. 4] no. 1, p. 47.

Major topics are noted of the 15 papers delivered at a conference held in Leningrad from the 20th to the 23rd of Nov. 1957.

Ortmann, Konrad.
REACTION (ENGINE) DRIVE DEVICE ACTUATED WITH LIQUID OR GASEOUS FUEL (Mit Flussigem oder Gasformigem Brennstoff Angetriebene Ruckstobantriebsvorrichtung). [1959] [7]p. F-TS-9504/V.
Order from LC or SLA mi$1. 80, ph$1. 80 59-12153

Trans. of German patent 503766, class 46 d, group 17 0 17618 I/46d, pub. 17 July 30, pat. in Germany since 29 Sep 28, released 26 July 30.

The achievement of the present invention in the case of reaction drive devices lies in that the pressure of gases in the combustion chamber remains essentially at the same level, even shortly after opening the locking device of the combustion chamber. The invention consists in providing an auxiliary combustion chamber between the combustion chamber and the exhaust pipe, which may be shut off by a device controlled from the combustion chamber. This auxiliary chamber is connected, immediately after the combustion in it has started, with the main combustion chamber.

Söhngen, H.
AERODYNAMIC FORCES ON A VIBRATING UNSTAGGERED CASCADE (Luftkräfte an einem schwingenden Gitter) tr. by Mary L. Mahler. Aug 57, 16p. 5 refs.
Order from NASA NACA TM1412

Trans. of Zeitschrift fllr Angewandte Mathematik und Mechanik (Germany) 1955, v. 35, no. 3, p. 81-88.

The unsteady aerodynamic forces, based on two-dimensional incompressible flow considerations, are determined for an unstaggered cascade, the blades of which are assumed to vibrate in phase with one another in an approach flow parallel to the blades.

Machine Parts and Mechanisms

Adamov, A. N.
ON THE QUESTION OF OPTIMUM TIME OF RUN BEFORE RAISING THE BIT FROM A HOLE (Kvoprosu o Ratsional'nom Vremeni Pod'ema Dolota s Zaboya). July 57 [10]p. 6 refs. C. T. S. no. 332.
Order from LC or SLA mi$1. 80, ph$1. 80 59-14186

Trans. of Neftyanoye Khozyaystvo (USSR) 1956, no. 4, p. 15-22.

An examination of 66 worn bits from sectional turbodrills, used at 340 to 2195 m, showed that none of the existing or suggested methods for determining the time of ending the drill run in a borehole is satisfactory. The best time for raising the bit should be determined by comparing the change of cutting speed with the progress of bit wearing during cutting.

Baranov, G. G.
SOME RESULTS AND PROBLEMS IN THE FIELD OF PRECISION (IN THE INSTANCE OF THE AUTOMATIC PRODUCTION OF BALL AND ROLLER BEARINGS). [1959] [10]p. 12 refs.
Order from LC or SLA mi$1. 80, ph$1. 80 59-15824

Trans. of Sessiya Akademiya Nauk SSSR po Nauchnym Problemam Avtomatizatsii Proizvodstva [held] 15-20 Oct 56, v. 6, p. 149-167.

Brovman, Ya. S.
THE ELECTRIC DRIVES OF HEAVY MACHINE TOOLS (Elektroprivod Tyazhelykh Stankov). July 57 [11]p. C.T.S. no. 322.
Order from LC or SLA mi$2.40, ph$3.30 59-14177

Trans. of Elektrichestvo (USSR) 1955, no. 12, p. 19-24.

Iokheles, F. Ya.
STUDY OF WHITE LAYERS UNDER CONDITIONS OF WEAR ENTAILING DESTRUCTIVE PITTING [Issledovaniye Belykh Prosloyek pri Pittingovom Iznose]. May 59, 2200 words.
Order from HB $5. 75 HB-4392

Trans. of Metallovedeniye i [Termicheskaya] Obrabotka Metallov (USSR) 1958, no. 10, p. 28-33.

Study of formation and nature of white layers on steel exposed to high local stresses and increased temperatures, for example, on gears. Steels used in study: Cr-Ni (-W) constructional steels. Setup for X-ray analysis of white layer: results obtained with it. Micrographic analysis data. Effect of tempering on stability of structure of white layers; effect of the latter on (destructive) pitting. Factors increasing the strength of the white-layer metal; lessons to be learned for the manufacture of gears. (HB abstract)

Kogan-Bol'man, G. L
CONFERENCE ON DESIGN, MANUFACTURE AND RESEARCH RELATING TO GEAR TRANSMISSIONS AND FLEXIBLE DRIVES, ODESSA [Konferentsiya po Voprosam Rascheta, Konstruirovaniya i Issledovaniye Zubchatykh Peredach i Peredach Gibkoy Svyaz'yu]. 1957 [1959] 3p.
Order from LC or SLA mi$1. 80, ph$1. 80 59-15828

Trans. from Mashinostroitel', 1958, no. 6 [p. 43-44].

The subjects of the papers read before the 273 delegates are noted.

Palmgren, A.
RECENT STUDIES ON ENERGY LOSSES IN ROLLER BEARINGS (Neue Untersuchungen über Energieverluste in Wälzlagern) tr. by R. C. Murray. July 58 [9]p. Trans. 759.
Order from SLA mi$1.80, ph$1.80 59-10065

Trans. of VDI Berichte (West Germany) 1957, v. 20, p. 117-121.

Losses due to sliding friction and elastic hysteresis in the bearing metal of various types of ball and roller bearings were studied as functions of load, speed, oil flowrate, etc. The total running resistance is approximately the sum of the idling torque and to torque due to the load. At small loads the frictional resistance of ball bearings is smaller than that of roller bearings, but at high loads and moderate speeds, roller bearings are better than ball bearings. It is now possible to calculate the energy losses in roller bearings with an accuracy sufficient for all practical purposes.

Manufacturing Equipment and Processes

*AVTOMATICHESKAYA SVARKA (USSR) 1959, [V. 12] NO. 1, P. 3-92 (Automatic Welding). [1959] [21]p. SOV-125-59-1-(1-15)/15.
Order from OTS $0.50, $3.00/6 mo. PB 141 125T-13
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

BYULLETEN' IZOBRETENIY (USSR) 1958, NO. 6, P. 5-152 (Bulletin on Inventions). [1958] 1v. SOV-19-58-6-(1-685)/685.
Order from OTS $1.90, $10.00/6 mo. PB 141 014T-3
Foreign $2.15, $11.50/6 mo.

Consists of abstracts in English.

LOOKING BACK ON 1958. 6 Apr 59, 12p. JPRS: 1447-N.
Order from OTS $0.50 59-13400

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1959, no. 1, p. 4-7.

MASHINOSTROITEL' (USSR) 1959 (Machine Builder).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 2, p. 1-48, PB 141 116T-12
No. 3, p. 1-48, PB 141 116T-11

Consists of abstracts in English.

MEKHANIZATSIYA I AVTOMATIZATSIYA PROIZVODSTVA (USSR) 1959, NO. 1, P. 3-64 (Mechanization [and Automatization of Production]) [1959] [22]p. SOV-118-59-1-(1-16)/16.
Order from OTS $0.50, $6.00/year PB 141 117T-12

Consists of abstracts in English.

PRIBOROSTROYENIYE (USSR) 1958, 1959 (Instrument Manufacture).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

1958, no. 10, p. 1-33, PB 141 119T-12
1958, no. 11, p. 1-32, PB 141 119T-13
1959, no. 2, p. 1-35. PB 141 119T-14

Consists of abstracts in English.

SVAROCHNOYE PROIZVODSTVO (USSR) 1959, NO. 3, P. 1-48 (Welding Practices). [1959] [21]p. SOV-135-59-3-(1-24)/24.
Order from OTS $0.50, $3.00/6 mo. PB 141 138T-15
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

USSR ELECTRONIC AND PRECISION EQUIPMENT [NO. 10, 5 June 59]. [1959] [39]p. 90 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-18083

Trans. of unevaluated information selected from Russian-language publications.

Items of special interest are: A new State Committee for Automation and Machine Building, electronics in instrument making, aircraft instruments, new galvanic dry cells, schools for radio assemblers, plants, a defective camera, a voltage converter for battery radios, and an ozone air freshener. Other topics discussed include: (1) Local production and organization in RSFSR Armenian SSR, Georgian SSR, Azerbaydzhan SSR, Lithuanian SSR, and Kazakh SSR; (2) electronic equipment (radio, television, telephones, components, and prices); (3) computers; (4) instruments (industrial controls, electrical instruments, geophysical apparatus, medical equipment, testing equipment, watchmaking); (5) photographic and motion-picture equipment; and (6) electrical products.

VESTNIK MASHINOSTROYENIYA (USSR) 1958, 1959 (Herald of Machine Building)
Order from OTS $0.80, $4.50/6 mo.
Foreign $1.05, $6.00/6 mo.

1958, v. 38, no. 7, p. 3-91, PB 141 122T-6
1959, v. 39, no. 3, p. 3-88, PB 141 122T-7

Consists of abstracts in English.

Birfel'd, A. G., Gnilosyrov, E. G. and others.
COMPLEX BLOOMING MILL AUTOMATION (Kompleksnaya Avtomatizatsiya Blumingov). July 57 [17]p. (1 fig. omitted) C. T. S. no. 321.
Order from LC or SLA mi$2.40, ph$3.30 59-16994

Trans. of Elektrichestvo (USSR) 1955, no. 12, p. 9-18.

The complex automation of blooming mill 1100, the first automatic blooming mill in the USSR, includes automatization of the ingot transporter, receiving and set rolling conveyors, working roller conveyors, main drive and pressure application mechanism. The manipulator for straight-edges and the tilter are not automated. Ingot feed, rolling of the ingots and feeding of rolled ingots to the shears is automatic. The tie-up between the operation of the various mechanisms is carried out with the help of photo-relays and mutually interlocking systems of automatic control. The systems of automatic control of separate mill mechanisms are so designed that the command impulses are applied to the same functional control apparatus on which manual command controls act. This type of construction is economical and has the advantage that the basic parts of the manual and automatic controls are common, so that the automatic control may be completely disconnected for inspection or repair without stopping the mill. Various control devices are described in detail.

Boichenko, M. S.
SEMICONTINOUS CASTING OF STAINLESS STEEL. May 59, 3100 words.
Order from HB $8.25 HB-4470

Trans. of Stal' (USSR) 1958, v. 18, no. 11, p. 983-987.

Difficulties encountered in the continuous casting of titanium-stabilized 18% Cr, 8% Ni steel. Report on operating experience gained at a semicontinuous USSR casting plant with 18-8 Ti steel slabs (7X12 in). Measures taken to minimize the formation of a skin rich in nitrides and oxides on top surface of pool in mold, and entry of this skin into body of billet. Ejection of air by metal stream from ladle reduced by use of a tundish of new design; merits of having wooden boards on metal in (reciprocal) mold. Data on quality of cast metal; kind of defects and nonmetallic inclusions found. Steel quality after hot and cold rolling; surface condition; resistance to intergranular corrosion and mechanical properties of semicontinuously vs. conventionally cast 18-8 Ti steel. Crystallization studied with radiophosphorus. (HB abstract)

Bosdorf, L. and Müller, K.
STUDY OF THE MOVEMENT OF pH IN A CURRENTLESS NICKEL BATH. 15 May 59, 6p. 3 refs.
Order from RIS $10.00 RIS-97040

Trans. of Metalloberfläche (West Germany) 1958, v. 12, p. 150-151.

The effect of sodium glycolate upon the constancy of the pH-value is investigated. It is found that a 34.5μ thick layer is attainable in 120 minutes if the bath contains 30.g/l of sodium glycolate. In the presence of this salt the pH drops from 4.50 to 3.89. Comparative experiments with buffer salts and the corresponding acids demonstrate that greater thicknesses of layer are obtained with the salts.

Breydo, M. G., Kobrinskiy, A. Ye., and Besstrashnov, V. K.
SYSTEM OF PROGRAMME CONTROL OF A MILLING MACHINE. [1959] [8]p.
Order from LC or SLA mi$1.80, ph$1.80 59-15846

Trans. of Stanki i Instrument (USSR) 1956 [v. 27] no. 12, p. 9-12.

A program control device for automation in the machining of curvilinear profiles and surfaces is described which has been used in mock-up form. The system is based on the digital presentation of the necessary relative movement of the tool and the blank in the form of a combination of discrete magnitudes which characterize the relative position of the tool and the blank at specific intervals. Film was used as the program carrier.

Brosch, H. and Waburek, H.
PRODUCTION CONTROL IN ROLLING MILLS BY MEANS OF COMMUNICATING AND SIGNALLING SYSTEMS. [1959].
Order from BISI £6 10s BISITS 1198

Trans. of Stahl u[nd] Eisen (West Germany) 1959 [v. 79] 8 Jan, p. 23-32.

Chetverikov, S. S. and Zdrogov, N. N.
COOLING CUTTERS BY A JET OF LIQUID UNDER PRESSURE. [1959] [5]p. 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15782

Trans. of Vestnik Mashinostroyeniy[a] (USSR) 1957 [v. 37] no. 12, p. 71-75.

The 2-yr use of a jet of cooling liquid under pressure in the feed system of cutting machines at the Motor Factory i/n Likhachev confirmed the results of laboratory tests. High-pressure cooling liquid (up to 30 kg/sq cm) considerably increased the endurance of the cutters. This method of cooling is proposed for the machining of large precision surfaces of large components when stability of the dimensions of the tool is very important. Spraying of liquid can be easily eliminated by the installation of appropriate baffles, and good filtration and feed of the liquid under pressure can be centralized for a group of machines. The cooling method can be used for increasing the endurance of individual heavily loaded cutters or of all the cutters on a machine. In the latter case provision should be made that the jet cooling be switched on automatically only when the tool is working. Rational design of the feed of cooling liquid under pressure ensures convenience in running and a considerable increase in the endurance of the cutters, increase in the

precision of manufactured parts, and improvement in the fineness of the machined surface with a considerable saving in cutting tools and consequently a reduction in the cost of production of the finished components.

Davydovskiy, A. S. and Dunayev, P. F.
TECHNOLOGY OF CONSTRUCTION OF MACHINE TOOLS, ed. by V. G. Stankovich. [1959] [398]p. 3 refs. F-TS-9057/V.
Order from LC or SLA mi$11.10, ph$60.60 59-18103

Trans. of mono. Tekhnologichnost' Konstruktsiy Stankov, Moscow, 1955, p. 1-316.

The chief problems of the technology of design and construction of machine tools are discussed. A detailed analysis is made of the problems pertaining to the general fitting of machine tools, the technical requirements of the assembly of the structural elements of machine tools, the technical specifications for the semifinished parts supplied, and also the technical aspects of mechanical and thermal treatment of the structural parts, the cost of metals and other questions related to the technology of the construction of machine tools. The book is intended for engineers and constructers.

Ebersplicher, H.
COLD EXTRUSION OF STEEL. [1959] 10p.
Order from ATS $11.80 ATS-75L30G

Trans. of Werkstatt u[nd] Betrieb (West Germany) 1958, v. 91, no. 10, p. 605-608.

Eicken, H. and Heidenhain, W.
THE EFFECT OF DRAWING SPEED, REDUCTION IN CROSS SECTION AND CARBON CONTENT ON THE MECHANICAL PROPERTIES OF DRAWN STEEL WIRES: POWER REQUIREMENT IN DRAWING. [1959].
Order from BISI £3 10s BISITS 1245

Trans. of Stahl u[nd] Eisen (Germany) 1924 [v. 44] 18 Dec, p. 1687-1694.

Espe, W.
WELDING AND SOLDERING OF METAL PARTS IN HIGH VACUUM TECHNIQUE. [1959] 27p. 73 refs. A. C. S. I. L. Trans. no. 940.
Order from SLA mi$2.70, ph$4.80 59-10214

Trans. of Vakuum-Technik (Germany) 1955, v. 4, no. 3, p. 51-64.

Four tables are given. Captions are as follows: (I) Welding and soldering joints which have been tried out in practice in the construction of vacuum tubes; (II) Spot welding possibilities of metals, particularly sheets; (III) Special solders of the vacuum technique placed in descending order of melting points; and (IV) Gold interpenetration soldering for soldering copper or copper plated metal flanges together.

Funke, Paul.
INFLUENCE OF FORWARD AND BACK PULL ON THE ROLLING FORCE. [1959] 8p. 13 refs.
Order from SLA mi$1.80, ph$1.80 59-15066

Trans. of Stahl und Eisen (West Germany) 1958, [v. 78, no. 25, p. 1832-1834].

Garnyk, G. A. and Samarin, A. M.
PRODUCTION OF TRANSFORMER STEEL IN VACUUM FURNACES. May 58, 4400 words.
Order from HB $9.80 HB-4362

Trans. of mono. Primeneniye Vakuuma v Metallurgii, Moscow, 1958, p. 14-34.

Laboratory experiments on the production of two series of melts of transformer steel, one in ordinary, and the other in vacuum induction furnaces; and study of reasons for improved magnetic properties of vacuum-produced steel. Gas and inclusion contents. Semi-industrial trials: melting practice; results: watt losses; magnetic permeability; ductility. Behavior of vacuum-melted steel in cold rolling; grain size data. Contents of carbon, oxygen, sulfur, and nonmetallic inclusions; difference in nature of inclusions between those in vacuum-produced steel and in open-furnace steel. Form in which carbon occurs in vacuum steel. Effect of holding the bath under vacuum after introduction of ferrosilicon, upon sulfur content. This paper amplifies and supplements the earlier 1956 report by these authors: HB Translation #3843. (HB abstract)

Gerlach, E.
ROLL CRACKING IN SHEET MELLS. [1959].
Order from BISI £2 15 BISITS-1232

Trans. of Met[allurgie] u[nd] Giessereitechn[ik] (Germany) 1952 [no. 1] p. 14-[1]7.

Härer, A.
PRESS WORKING OF METALS DEEP DRAWING. [1959] 12p.
Order from ATS $11.30 ATS-74L30G

Trans. of Werkstatt u[nd] Betrieb (West Germany) 1958, v. 91, no. 10, p. 625-629.

Hasimoto, H. A.
AERODYNAMIC DESIGN OF THE OPEN-HEARTH FURNACE. V. FUNCTION OF THE AIR UPTAKE. [1959].
Order from BISI £8 10s BISITS-1124

Trans. of Tetsu to Hagane (Japan) 1957 [v. 43] July, p. 695-699.

Hasimoto, H. A.
AERODYNAMIC DESIGN OF THE OPEN-HEARTH FURNACE. VI. FUNCTION OF THE FURNACE HEAD. [1959].
Order from BISI £7 BISITS-1125

Trans. of Tetsu to Hagane (Japan) 1957 [v. 43] July, p. 699-703.

Heischkeil, W. and others.
NEW PLANT IN THE BASIC CONVERTER AND OPEN-HEARTH STEEL PLANTS OF AN INTEGRATED IRON AND STEEL WORKS. [1959].
Order from BISI 6 BISITS 1208

Trans. of Stahl u[nd] Eisen (West Germany) 1959 [v. 79] 8 Jan, p. 8-17.

Hoff, H.
VACUUM DEGASSING OF LOW-CARBON UNKILLED STEEL DURING POURING OR SOLIDIFICATION IN MOLD. PT. II. STREAM DEGASSING OF UNKILLED LOW-CARBON STEEL. May 59, 1500 words.
Order from HB $3.90 HB-4600

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 7, p. 408-410.

Requirements to be met by a vacuum-treating process for large-tonnage steel: (a) Pouring directly from ladle into ingot mold; (b) shortest possible route of steel while under vacuum; (c) collection of degassed droplets into a dense stream before entering the mold. Description of an experimental setup for stream degassing of either top of bottom-poured low-carbon steel. Details on pilot plant set up at author's works and using a steam ejector. Results: Ingots free from pipe and rimholes; best surface quality; absence of nonmetallic inclusions according to ultrasonic tests. Sulfur prints from stream-degassed vs. conventional slabs. Properties of C. R. strip, made non-aging by small additions of aluminum to degassed metal. (HB abstract)

Iweins, R.
THE MANUFACTURE OF CAST STEEL ROLLS AT THE OUGRÉE-MARIHAYE WORKS. [1959]
Order from BISI 4 10s BISITS 1230

Trans. of Rev[ue] Univ[ersalle des] Mines (France) 1945, 15 Sep, p. 122-128.

Koch, K. H
DEVELOPMENT AND TASKS OF THE WATER SUPPLY SERVICE IN THE IRON AND STEEL INDUSTRY. [1959]
Order from BISI 4 5s BISITS 1252

Trans. of Stahl u[nd] Eisen (West Germany) 1959, [v. 79] 22 Jan, p. 89-94.

Kornfel'd, V. N.
EFFICIENCY OF INTENSIFIED OPEN-HEARTH MELTING WITH OXYGEN UNDER SUITABLE OPERATING CONDITIONS [1959].
Order from BISI 6 BISITS 1194

Trans. of Stal' (USSR) 1958 [v. 18, no. 12] p. 1095-1102.

Livshits, L. S. [Bakhrakh, L. P. and Panich, S. I,]
COMPOSITION VARIATIONS IN WELDS [O Neodnorodnosti v Zone Splavleniya Svarnykh Soyedineniy]. May 59, 1800 words.
Order from HB $4.65 HB-4120

Trans. of Metallovedeniye i [Termicheskaya] Obrabotka Metallov (USSR) 1958, no. 1, p. 26-[29].

Strips of "steel 3" (0.18% C, 0.45% Mn) were welded by means of a wire under flux. The manganese content in the seam was varied by introducing different quantities of ferro-manganese in the coating and thus a number of weld joints were obtained containing different quantities of manganese, while the content of other elements remained approximately unchanged. In welds of pearlitic steels with differing chemical compositions of the metal in the weld and the base metal, the formation is possible of a structural and chemical nonuniformity in the melting zone which is characterised by the formation of decarburised and carburised zones; the formation of these nonuniformities proceeds in the solid state due to displacement of carbon atoms from one zone of the weld into the other, whereby the carbon displacement takes place only in the sections which are close to the fusion zone, namely, it proceeds from the sections containing elements which produce less stable carbides to those sections which contain elements producing more stable carbides, i.e., from the sections with lower content of carbide-forming elements into the section with higher content of such elements. The direction of displacement of the carbon does not depend on its relative concentration in the neighbouring regions and is determined by the qualititative and quantitative difference in the content of carbide-forming elements in the weld and in the base metal and, therefore, frequently the carbon moves away from zones with low carbon content; immediately after welding, the weld does not always have an appreciable nonuniformity in the fusion zone. The nonuniformity occurs during heating to temperatures slightly below the Ac_1 point. Displacement of carbon and formation of the above mentioned type of nonuniformities take place at heating temperatures at which the iron is in the α state.

Lüdemann, K. F.
AN ECONOMIC COMPARISON OF VARIOUS STEEL PRODUCTION PROCESSES WITH SPECIAL REGARD TO THE DEVELOPMENT OF FERROUS METALLURGY IN THE GERMAN DEMOCRATIC REPUBLIC. [1959].
Order from BISI 6 10s BISITS 1163

Trans. of Neue Hütte (East Germany) 1958 [v. 3, no. 8] p. 462-474.

Mayer, K. E. and others.
AUTOMATIC CONTROL OF BASIC CONVERTER HEATS. [1959].
Order from BISI 3 15s BISITS 1153

Trans. of Stahl u[nd] Eisen (West Germany) 1958 [v. 78] 13 Nov, p. 1670-1676.

Mise, S., Okamoto, T., and Funatch, A.
METAL FLOW IN OBLIQUE ROLLING. [1959].
Order from BISI £10 BISITS-1351

Trans. of Sumitomo Metals (Japan) 1957 [v. 9] July, p. 143-157.

Pepperhoff, W. and Bracksteck, H. J.
STUDY OF THE FLAME-TEMPERATURE RADIATION IN AN OPEN-HEARTH FURNACE. [1959].
Order from BISI £ 3 5s BISITS 1215

Trans. of Stahl u[nd] Eisen (West Germany) 1956 [v. 76] 1 Nov, p. 1453-1456.

Perlin, I. L.
CONSIDERATIONS OF STABILITY IN THE FLOATING PLUG DRAWING PROCESS FOR TUBES. [1959].
Order from BISI £2 15s BISITS 1328

Trans. of Tsvetnyye Metally (USSR) 1958 [v. 31] Sep. p. 58-61.

Petrov, Yu. N.
EFFECT OF ELECTROPLATING CONDITIONS ON STRUCTURE AND WEAR RESISTANCE OF IRON DEPOSITS [Vliyaniye Usloviy Elektroliza na Strukturu i Iznosostoykost' Elektroliticheskikh Zheleznykh Pokrytiy]. May 59, 1500 words.
Order from HB $3.25 HB-4450

Trans. of Metallovedeniye i [Termischeskaya] Obrabotka Metallov (USSR) 1958, no. 12, p. 53-56.

Optimum electrolysis conditions were sought that would ensure dense fine-grain wear-resistant coatings of iron for use in repair shops. Tests indicated that coatings with optimum properties for repair work are obtained from chlorine electrolytes of the following compositions in g/liter: (1) with a D_K of 20 to 30 amp/dm^2 and a temperature of 80° to 95°, $FeCl \cdot 4H_2O$, 300 to 600; NaCl, 100 to 150, glycerin, 80 to 100; sugar, 30 to 40, and HCl, 0.8 to 3.6; and (2) with a D_K of 20 to 40 amp/dm^2 and a temperature of 75° to 95°, $FeCl_2 \cdot 4H_2O$, 300 to 600; NH_4Cl, 75 to 150; $MnCl_2 \cdot 4H_2O$, 50 to 150, glycerin, 80 to 100, dextrine, 20 to 50, and HCl, 0.8 to 3.4.

Plücker, R.
PRECISION FINISHING OF METAL SURFACES. [26 June 41] 4p.
Order from SLA mi$1.80, ph$1.80 59-15466

Trans. of Werkstatt und Betrieb (Germany) 1935 [v. 68] 10 Oct, p. 257-259.

Thieme, J.
FIRE CRACKING OF CAST IRON MILL ROLLS. [1959].
Order from BISI £2 BISITS-1233

Trans. of Met[allurgie] u[nd] Giessereitechn[ik] (Germany) 1952 [no. 1] p. 17[-]18.

Vill', V. I.
WELDING OF METALS BY FRICTION [Svarka Metallov Treniyem]. May 59, 4100 words.
Order from HB $9.85 HB-4502

Trans. of Svarochnoye Proizvodstvo (USSR) 1957, no. 9, p. 19-23.

Russian pioneering work on use of frictional heat for the welding of metals. Productivity and economy of friction welding compared with fusion welding. Heat set free in friction welding; its distribution and underlying mathematics. Principle of process. Main characteristics. Metallography of resulting joints in steel, gray iron, brass, aluminum, and titanium. Advantages: highest efficiency; low specific power consumption; simple equipment; ease of automation; safety; independence of electric power lines (an internal combustion engine can supply the power for rotating one of the parts to be welded). Specialized equipment developed at author's Institute; data on welding machine. Applications of friction welding include the welding of dissimilar metals; of rods and tubes; flanges to tubes; rods to sheets or plates; gas and oil pipes; die-forged parts to plates; concrete reinforcing bars, etc. Limitations of process. (HB abstract)

Voigt, H. and Schmalhaus, G.
INFLUENCE OF REGENERATOR DESIGN ON THE PRE-HEATING OF AIR AND GAS IN TRIPLE-GAS-FIRED OPEN-HEARTH TILTING FURNACES [1959].
Order from BISI £ 5 10s BISITS 1228

Trans. of Stahl u[nd] Eisen (West Germany) 1959, [v. 79] 22 Jan, p. 80-88.

Yakunin, Ya. K. and Khasdan, S. M.
STABILITY AND VIBRATION OF CIRCULAR SAW DISCS DURING OPERATION (Ob Ustoychivosti i Vibratsii Diskov Kruglykh Pil pri Pilenii). [1959] [19]p. 1 ref. Trans. no. 4065.
Order from LC or SLA mi$2.40, ph$3.30 59-15402

Trans. of [Derevoobrabatyvayushchaya Promyshlennost'] (USSR) 1957, v. 6, no. 8, p. 11-14 and no. 9, p. 14-15.

The vibrations of saw discs were investigated with respect to their dependence on the kinematic angle of incidence, the rate of cutting and the bite per tooth, and the thickness of the material sawn. An inductive differential detector with two variable airgaps was used to obtain the data. The vibration of flat saw discs had no significant influence on the quality of cutting. The quality is affected by the thickness of the chips cut and by the nature of chip formation. With increasing bite per tooth, the damping effect of the timber becomes more prominent, which leads to a reduction of the amplitude of vibration of the disc. Vibration of saw discs cannot be used as a criterion for obtaining standards of tensioning.

Zhikharev, V. I.
QUALITY AND ACCURACY OF SURFACES MACHINED WITH CERAMIC CUTTING TOOLS (Kachestvo i Tochnost' Poverkhnostei, Obrabotannykh Keramicheskimi Reztsami). July 57, 4p. C. T. S. no. 348.
Order from LC or SLA mi$1. 80, ph$1. 80 59-14179

Trans. of Vestnik Mashinostroyeniya (USSR) 1956, v. 36, no. 7, p. 42-45.

Experiments showed that the surface finish of components produced from steel, copper, brass and other materials, and machined with ceramic-tipped cutting tools, may be in no way inferior to that obtained with hard metal tools, and in some cases may be even better. The law of relation characterising the effect of cutting speed, feed, depth of cut, geometrical parameters of ceramic tipped tool, on chip deformation, is fundamentally analogous to the relationship found when machining with hard-metal tipped tools. Chip shrinkage in working with ceramic tools in most cases is somewhat less than with hard metal. Changes in chip shrinkage with changes in cutting speed and feed may be represented by the following equations:

$$\xi = \frac{C_1}{v^{0.14}} \quad (\text{for } v = 100\text{-}250 \text{ m/min})$$

$$\xi = \frac{C_2}{s^{0.2}} \quad (\text{for } s = 0.2\ 0.5 \text{ mm/rev})$$

The value of the cutting force components in machining carbon steels with ceramic-tipped tools in most cases is somewhat less (by 10-15 per cent.) than with the hard metal tool T15K6.

Zur, M.
THE WATER SUPPLY SYSTEM OF THE HOESCH-WESTFALENHÜTTE A. G. DORTMUND. [1959].
Order from BISI 5 15s BISITS 1071

Trans. of Stahl u[nd] Eisen (West Germany) 1958 [v. 78] 21 Aug, p. 1191-1200.

Transport, Traction and Hoist Facilities

AVTOMOBIL'NAYA PROMYSHLENNOST' (USSR) 1959. NO. 3, P. 1-48 (Automobile Industry). [1959] [1v] SOV-113-59-3-(1-17)/17.
Order from OTS $0.50, $3.00/6 mo. PB 141 110T-13
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

RECENT DEVELOPMENTS IN USSR LOCOMOTIVE PRODUCTION (KHAR'KOV PLANT TO ABANDON LOCOMOTIVE MANUFACTURE IN 1961). 6 Mar 59 [12]p. 20 refs. AF 1255600.
Order from LC or SLA mi$2. 40, ph$3. 30 59-16328

Trans. from Soviet open sources 1956-1958.

Discussions are presented on (1) the announced plan to discontinue the production of diesel locomotives at the Khar'kov Plant in 1961, (2) present production of the Khar'kov plant with respect to the TE-3, TE-10, and TE-11 freight locomotives and the TE-7 and TE-15 passenger locomotives, (3) the beginning of electric locomotive production at a new plant in Tiflis, Georgian SSR, (4) plans for a third locomotive building plant, (5) production bottlenecks of the Novocherkassk Plant, and (6) a review of the production of locomotives from 1954 to 1958.

SUPPLY OF ELECTRIFIED RAILROADS IN POLAND. 7 Nov 58, 31p. 20 refs. JPRS(NY) rept. no. 840.
Order from OTS $1.00 59-11021

Trans. of Przeglad Elektrotechniczny (Poland) 1958, v. 34, no. 2/3, p. 140-150.

Contents:
1957 status and 1965 and 1975 development of electrified railroad lines in Poland according to one of the workable concepts, and the annual electric energy demanded per line kilometer;
Distribution of traction substations at a 3,000-v dc system and (on several lines) at a 50-c ac system;
Relationship between substation spacings and network cross sections and the density of train traffic;
Influence of changes in train traffic on the parameters of supply equipment;
Relationship between peak values and peak use factor and the line road;
Technical and economic problems of a proper interrelation of power and electric-traction investments.

Eckinger, K.
MODERN BASIS FOR THE DEVELOPMENT OF CRANE BRIDGES. [1959].
Order from BISI 5 BISITS 922

Trans. of Stahl u[nd] Eisen (West Germany) 1957 [v. 77] 10 Jan, p. 15-23.

Marquard, E[rich].
SPRING SUSPENSION, SHOCK ABSORBERS, AND THE DYNAMICS OF THE ROAD FORCES. PT. I-II. [1958] [67]p. 16 refs.
Order from SLA mi$3. 90, ph$10. 80 59-10139

Trans. of [ATZ] Automobiltechnische Zeitschrift (Germany) 1956, v. 58, no. 5, p. 134-138 and no. 6, p. 153-161.

Consideration is given to the vertical forces and the vehicle movements created in a conventional uniaxial or biaxial automobile when it is driven over uneven pavement. The perpendicular movements and forces, which are studied, are determined by: (1) the function of uneveness of the roadway, (2) speed, (3) the knowledge of the spring factor in tires and springs, (4) the knowledge of equalizing the spring factor in tires and shock absorbers, (5) the vertically moving mass composed of wheels (axles) and the chassis, (6) the moments of inertia in the mass

consisting of the axles and the chassis, and (7) the dimensions of the vehicle; especially of the wheels, the gauge, and the wheelbase.

TRANSPORTATION, COMMUNICATIONS, AND ELECTRIC POWER IN THE USSR [NO. 16, 26 May 59]. [1959] [15]p. 103 refs.
Order from LC or SLA mi$3.60, ph$9.30 59-16992

Trans. of unevaluated information selected from Russian-language publications.

Railroad transportation is discussed in terms of general operations, individual railroad systems, electrification, construction and installation, and rolling stock and equipment. Other transportation problems concern maritime shipping and shipbuilding, river shipping (general operations and shipbuilding), civil air fleet operations and motor transportation. Topics on communications include administrative affairs, USSR communications facilities, Union Republic communications facilities, radio relay lines, line operations, radio, telephone, television and postal communications. Discussions on electric power deal with USSR in general, Estonian SSR, Georgian SSR, Kazakh SSR, Kirgiz SSR, Lithuanian SSR, RSFSR (central, east Siberia, far east, north and northwest, north Caucasus, Ural, Volga, and west Siberia), Tadzhik SSR, and Ukrainian SSR.

TRANSPORTATION, COMMUNICATIONS, AND ELECTRIC POWER IN THE USSR [NO. 17, 29 JUNE 59]. [1959] [58]p. 76 refs.
Order from LC or SLA mi$3.60, ph$9.30 59-18395

Trans. of unevaluated information selected from Russian-language publications.

MATERIALS

Borozdin, P. I.
PRECAST REINFORCED CONCRETE PAVEMENT SLABS. [1958] 7p.
Order from LC or SLA mi$1.80, ph$1.80 59-10794

Trans. of Avtomombil'nyye Dorogi (USSR) 1958, v. 21, no. 5, p. 23-24.

Data are presented which indicate that precast reinforced concrete slab pavements are well suited to: (a) all temporary construction job access roads with heavy swift moving traffic; (b) permanent junction and access roads in which grading and permanent construction of conventional pavements can not be undertaken; (c) access roads under unfavorable soil-moisture or climatic conditions; and (d) road sections located above a heavy network of underground communication cables calling for periodic access and inspection. Monolithic pavements should be replaced by precast solid reinforced concrete slabs.

Kühl, Hans.
MINERALOGICAL PROBLEMS OF CEMENT MANUFACTURE: THEORY AND PRACTICE. [1958] 10p.
Order from SLA mi$1.80, ph$1.80 59-10733

Trans. of Silikat Technik (East Germany) 1957, v. 8, no. 1, p. 24-27.

Paper presented at the Institute of Mineralogy and Petrography at the Humboldt University in Berlin, No. 22, 1956.

Magat, M[ichel].
THE INFLUENCING OF THE PROPERTIES OF PLASTICS BY ENERGY-RICH RADIATION. [1959] 17p. (4 figs. omitted).
Order from SLA mi$2.40, ph$3.30 59-15928

Trans. of Kunststoffe (West Germany) 1957, v. 47, no. 8, p. 409-412.

The present report describes polymerization, latticelike polymerization and graft polymerization as promising fields of application of energy-rich radiation in the plastics industry.

USSR MATERIALS AND MATERIALS PROCESSING EQUIPMENT [NO. 9, 18 May 59]. [1959] [63]p. 150 refs.
Order from LC or SLA mi$3.90, ph$10.80 59-16995

Trans. of unevaluated information selected from Russian-language publications.

Topics considered include: Chemical industry, mineral deposits, petrochemicals, chemical fibers, plastics, agriculturel chemicals; chemical machinery; petroleum and gas industries, drilling, refining, pipelines; coal, peat, shale; ferrous metallurgy; nonferrous metallurgy; metallurgical machinery.

ZHURNAL NAUCHNOY I PRIKLADNOY FOTOGRAFII I KINEMATOGRAFII (USSR) 1959, V. 4, NO. 2, P. 81 - 160 (Journal of Scientific and Applied Photography and Cinematography). [1959] 1v.
SOV-77-4-2-(1-18)/18.
Order from OTS $0.50, $3.00/year PB 141 073T-6
Foreign $0.75, $4.50/year

Consists of abstracts in English.

Adhesives and Sealants

Gerngross, Otto.
GLUES FOR PLY-WOOD. [1959] 15p. 9 refs.
Order from SLA mi$2.40, ph$3.30 59-15348

Trans. of Deutsche Versuchsanstalt für Luftfahrt, e. V. Jahrbuch (Germany) 1930, p. 428-433. Its Bericht 192.

Discussions are presented on (1) plywood and the requirements of plywood glues, (2) the nature of adhesive materials and the gluing process, and (3) experiments concerning the use of casein- , albumin- Bakelite- , Java- , and cellulose-ester glues, and tego-glue-film.

Gerngross, O.
WOOD GLUES AND THEIR TESTING WITH SPECIAL ATTENTION TO THE GLUING OF WOOD WITH FILMS OF GLUE. [1959] [13] p. (6 figs. omitted) 20 refs.
Order from SLA mi$2.40, ph$3.30 59-15640

Trans. of Angew[andte] Chem[ie] (Germany) 1931, v. 44, no. 13, p. 231-237.

Thinius, Kurt.
FOR A BETTER UNDERSTANDING OF FIRMNESS OF ADHESION BETWEEN LAYERS OF VARIOUS POLYMERS. [1959] 12p. 7 refs.
Order from SLA mi$2.40, ph$3.30 59-15849

Trans. of Kunststoffe (West Germany) 1947, v. 37 [no. 2/3] p. 36-38.

The problem is reviewed that exists when various plastics are to be mutually combined, with intermediate layers to facilitate adhesion, thus forming a "threefold combination." Good adhesion to the base or between two plastics cannot be obtained if the plastics to be combined exhibit opposite polarity. Neither the reticular effect of the solvent plays a decisive part, nor can a satisfactory result be obtained by the use of common solvents. New methods are shown that compensate for different polarity. Thus it is possible to adhesives any kind of film-forming material to another heterogeneous base.

Ceramics and Refractories

OGNEUPORY (USSR) 1959 [V. 24] (Refractories).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 1, p. 1-48, PB 141 134T-14
No. 2, p. 49-96, PB 141 134T-13
No. 3, p. 97-144, PB 141 134T-15

Consists of abstracts in English.

STEKLO I KERAMIKA (USSR) 1958, NO. 12, P. 1-48 (Glass and Ceramics). [1959] 1v. SOV-72-58-12-(1-23)/23.
Order from OTS $0.60, $3.50/6 mo. PB 141 068T-12
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

[Acloque, Paul].
CONSIDERATIONS ON PROGRESS MADE IN THE THEORIES OF ANNEALING AND QUENCHING (Progrès des Théories de la Recuisson et de la Trempe) tr. by Carl Demrick. [1959] [38]p. 10 refs.
Order from SLA mi$3.00, ph$6.30 59-15330

Trans. of Verres et Refractaires (France) 1951 [v. 5] no. 5, p. 247-260.

A review of the question of the origin of internal strains in rapidly cooled glass and the isotonic character of the strains resulting therefrom is given. The field of annealing is reviewed in order to point out that it is wrong to consider the pre-existing strains as playing an entirely passive part; they can be skillfully used for particular results. The quenching of flat glass and some reflections on the relations between structural quenching and mechanical quenching are described.

Angenot, P.
TECHNIQUE OF SEPARATING AND ANALYZING INCLUSIONS IN GLASS. [1959] [11]p. 13 refs.
Order from SLA mi$2.40, ph$3.30 59-15329

Trans. of paper presented at Third International Congress on Glass, Venice, 7 Apr 53.

The glass covering the inclusion can be ground first, and the inclusion separated by grinding with a diamond drill rotating at 12,000 to 15,000 rpm. Impurities in the inclusion due to the grinding are removed by H_2S with Pt. "Fire loss" is reduced to 0.40 to 0.50% by the use of benzene as a solvent. The new technique can be used , (1) to take samples of common surface defects such as "cords", "waves", and relief striations on glass, (2) to take samples of the finest details of old glass goods, generally without spoiling the piece, and (3) to separate selectively stones of a refractory from their binder.

Brokhin, I. S. and Funke, V. F.
MANUFACTURE AND STUDY OF SOME PROPERTIES OF SILICON NITRIDE CERAMIC. [1959] [5]p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15803

Trans. of Ogneupory (USSR) 1957 [v. 22] no. 12, p. 562-566.
Another translation is available from HB $5.90 as HB-4490, Mar 59.

The best conditions for producing articles of silicon nitride by nitriding porous masses of silicon powder in an atmosphere of nitrogen were established. The high stability of Si_3N_4 to oxidation at a temperature of 1,200° was demonstrated. The strength of samples (σ_{bend}) at room temperature and up to 1,200°C remains at the same level. The maximum strength of 16 kg/mm^2 is found in samples with density of 2.5 g/cc and 25% porosity which are obtained under the optimum conditions for nitriding at 1,600°C.

Lungu, Atelian N.
CONTRIBUTION TO THE CALCULATION OF ANNEALING AT THE PRODUCTS FROM GLASS.

[1959] 11p. (3 figs. omitted) 6 refs.
Order from SLA mi$2.40, ph$3.30 59-15452

Trans. of Industria Usoară (Rumania) 1957, v. 4 [no. 4] p. 172-175.

Okhrimovich, B. P. and others.
THE USE OF UNBURNT MAGNESITE-CHROME BRICKS FOR FURNACE ROOFS. [1959]
Order from BISI[illegible] 3 5s BISITS 1268

Trans. of Stal' (USSR) 1958 [v. 18, no. 2] p. 126-130.

Ostlund, Gösta and Stübner, Hugo.
ALKALI-SUBSTITUTION IN GLASS-INDUSTRY. [1959] [17]p. 7 refs.
Order from SLA mi$2.40, ph$3.30 59-15325

Trans. of Teknisk Tidskrift (Sweden) 1945 [10 Mar] p. 271-275.

The problems which arose during W.W.-II in glass-smelting and which necessitated a change from soda glass to sulphate glass were solved by the use of feldspar.

Pitskhelauri, L. A.
CHEMICAL AND MINERALOGICAL CHANGES IN REFRACTORIES OF THE REGENERATOR OF A BASIC OPEN-HEARTH FURNACE (Khimiko-Mineralogicheskige Izmeneniya v Ogneuporakh iz Regeneratora Osnovnoy Martenovskoy Pechi). June 57 [7]p. (4 figs. omitted) 4 refs. C. T. S. no. 340.
Order from LC or SLA mi$1.80, ph$1.80 59-14187

Trans. of Ogneupory (USSR) 1956, v. 21, no. 5, p. 207-211.

Chemical and mineralogical studies of dinas and chamotte brick after a period of service in the regenerator checker of an open-hearth furnace show that the zone formation which occurs in dinas is absent in chamotte. Oxides do not penetrate into the chamotte but form a thin well-defined crust.

Rybnikov, V. A.
PROPERTIES OF UNFIRED CHROME-MAGNESITE AND MAGNESITE-CHROMITE BRICKS. [1959].
Order from BISI[illegible] 2 BISITS 1267

Trans. of Ogneupory (USSR) 1958 [v. 23] no. 7, p. 303-307.

Winter, Anyuta.
THE MODERN EVOLUTION OF THE PROBLEM OF GLASS ANNEALING (Evolution du Problème du Recuit du Verre). [1959] [27]p. 12 refs.
Order from SLA mi$2.70, ph$4.80 59-15331

Trans. of Verre[s] et Refractaires (France) 1948 [v. 2] no. 4, p. 211-221.

After a brief history of the annealing of glass the essential characteristics of a non-annealed glass, are given. Existence of tensions causing birefringence, heterogeneity in the mass and aging are discussed. Since the elimination of the tensions is not considered as being the adequate criterion for a good annealing, the evolution of a glass as a function of the temperature was studied by following in particular the variations of two of its physical constants, the index of refraction and the coefficient of expansion, as well as those of its birefringence. The variations of the index of refraction of glass were studied first by the single-prism method, and later by the more exact method of the direct vision prism. This study revealed the existence of a transformation region which corresponds to an intimate change in the very structure of the glass. It was found that in this region, the speeds of transformation increase with temperature. The variations of the coefficient of expansion as a function of the temperature gave rise to the same findings. It was the same in the study of birefringence by the quarter-wave plate method. The increase of birefringence in the transformation region showed that tensions can arise in the glass during heating as well as during cooling, and that tensions due to variations of the structure are added to the purely mechanical tensions due to cooling.

Yeremenko, V. N. and Beinish, A. M.
THE ELECTRICAL CONDUCTIVITIES OF BINARY SYSTEMS COMPOSED OF REFRACTORY OXIDES. [29 May 59] 23p. 31 refs.
Order from RIS $34.00 RIS R 770

Trans. of Zhurnal Neorg[anicheskoy] Khim[ii] (USSR) 1956, v. 1, no. 9, p. 2118-2130.

A direct current bridge circuit operating at 500 c was used to measure the electrical conductivities of ceramic specimens at high temperatures. The shrinkage on sintering and the electrical conductivity over the 20° to 900°C range was studied on the Al_2O_3 - Cr_2O_3; CoO - MgO; CoO - TiO_2; NiO - TiO_2; ZrO_2 - TiO_2; MgO - Cr_2O_3 and CaO - Cr_2O_3 systems. The conductivity vs. composition and shrinkage vs. composition curves indicate that a compound CoO. TiO_2 exists in the CoO - TiO_2 system, NiO. TiO_2 in the NiO - TiO_2 system, ZrO_2. TiO_2 in the ZrO_2 - TiO_2 system, and MgO. Cr_2O_3 in the MgO - Cr_2O_3 system.

Fuels, Lubricants, and Hydraulic Fluids

Apt, I.
DEVELOPMENT PROSPECTS FOR THE OUTPUT AND SALE OF PITCOAL DURING THE YEARS OF 1960-1975. 20 Nov 58, 26p. JPRS(NY) rept. no.. 851.
Order from OTS $0.75 59-11080

Trans. of Przeglad Elektrotechniczny (Poland) 1958, [v. 34, no. 2/3] p. 150-157.

Contents: Survey of coal management in the years 1946-1956 from the standpoint of the output, domestic consumption and exports of coal; Energy balance sheet of the West European countries and of the countries of the Coal and Steel Community, and the predicted demand for power in the years 1960-1975; Long-range

increase in black-coal demand in Poland during 1956-1975 for industrial purposes, transportation and consumer heating.

Biernacki, Wladyslaw
PRESENT STATE AND DEVELOPMENT PROSPECTS OF THE POLISH SOLID FUEL INDUSTRY. 11 Nov 58. 25p. (1 table omitted) 11 refs. JPRS(NY) rept. no. 853.
Order from OTS $0.75 59-11047

Trans. of Przeglad Elektrotechniczny (Poland) 1958, v. 34, no. 2/3, p. 163-170.

To reach in 1975 the planned output of 10^5 million kilowatt hours the envisaged coal demand in thermal-electric power plants for that year is to amount to 50 million tons of brown coal and 35.5 million tons of black coal. The Coal Sales Center regards such deliveries as feasible even at the least ambitiously conceived development of coal industry, i.e., at the minimum production of 140 to 142 million tons of black coal and 75 to 80 million tons of brown coal by that industry. The present writer questions this opinion, in particular, the possibility of extracting 35 to 40 million tons of brown coal in 1965. The creation of realistic planning requires a more penetrating analysis and revision of the hitherto adopted concepts of the development of both the coal industry and the output of electric energy.

Costantinides, G. and Rotteri, S.
DURATION OF THE EFFICIENCY OF DISPERSIVE ADDITIVES FOR LUBRICATING OILS UNDER THE CONDITIONS OF USE [1959] [27]p. 21 refs.
Order from SLA mi$2.70, ph$4.80 59-15532

Trans. of [la] Riv[ista dei] Combustibili (Italy) 1958, v. 12, no. 6, p. 474-493.

Kwiatkowski, Eugeniusz
PROBLEMS REGARDING GASEOUS FUELS AND RAW MATERIALS IN POLAND. 14 Nov 58, 21p. 8 refs. JPRS(NY) rept. no. 854.
Order from OTS $0.75 59-11060

Trans. of Przeglad Elektrotechniczny (Poland) 1958, v. 34, no. 2/3, p. 170-176.

Gas problems at present do not pertain merely to fuel and power questions, because gaseous fuels are nowadays a fairly important raw material of many branches of the chemical industry. Hence the meteoric rise in worldwide demand and the related economic and technological difficulties, which have arisen also in the Polish economy. A description of the optimum solutions for reconciling the growing needs and postulates of the metallurgical and chemical industries with the rising communal and private-household demand.

Neuberger, F.
IMPROVING THE WEAR RESISTANCE OF DIES BY TREATMENT WITH COLLOIDAL GRAPHITE. [1959].
Order from BISI £3 BISITS-1279

Trans. of Fertigungstechnik (Germany) 1956 [v. 6] July, p. 321-322.

Sachanen, A. N.
PRINCIPAL PETROLEUM PRODUCTS IN THE USSR: 1958 YIELDS AND OUTPUT. 1 May 59 [15]p. AF 1255765.
Order from LC or SLA mi$2.40, ph$3.30 59-16440

Trans. from Soviet open sources, 1937, 1938, 1941, 1942, and 1958.

Skok, V. I.
SPECIFIC GRAVITY CHANGE OF COALS AND ANTHRACITES UNDER LOAD METAMORPHISM. [1959] 5p. 6 refs.
Order from CCT $21.00 CCT-163-TT

Trans. of [Akademiya Nauk SSSR. Doklady] 1956, v. 107, no. 3, p. 467-470.

Graphs of the specific gravity of the dry ashless mass of bituminous coals and anthracites as a function of escaped volatiles and as a function of load metamorphism were constructed using Fermon's formula $\gamma_e^c = \gamma_e^d - 0.01A^d$, where γ_e^c and γ_e^d are the effective specific gravities of the dry ashless mass and the dry ash portion of the coal, respectively, and A^d is the yield of ash in the dry substance of the coal. The specific gravity of the combustible mass of soft coals and anthracites increases with the grade of load metamorphism by a linear law, by which the index changes by a value of 0.025 for 1 km of normal coal-bearing strata.

Warczewski, Zdzislaw
DEVELOPMENT PLAN OF THE COKE INDUSTRY AND GASEOUS ECONOMY IN POLAND IN THE YEARS 1957-1970 ON THE BACKGROUND OF GENERAL POWER ECONOMY. 3 Nov 58, 43p. JPRS(NY) rept. no. 855.
Order from OTS $1.25 59-11001

Trans. of Przeglad Elektrotechniczny (Poland) 1958, v. 34, no. 2/3, p. 176-188.

Contents: General characteristics of Poland's present power economy; Present state and developmental plan of the coke-chemical industry, and of gasification in Poland in the period from 1957-1970; Principal directives concerning the technical and economic aspects of the large investment projects necessary in these fields of industry.

Leather and Textiles

Pechoc, V[ladimir].
THERMO DYNAMIC CALCULATIONS FOR THE SPINNING PROCESS OF SYNTHETIC FIBERS. [1959] 14p. 13 refs.
Order from SLA mi$2.40, ph$3.30 59-15815

Trans. of Faserforschung [und] Textilt[echnik] (Germany) 1959 [v. 10] no. 2, p. 62-67.

A method is given for calculating the cooling time and the necessary spinning path to attain sufficient fiber cooling in the spinning of synthetic fibers. A practical application is made with polyamide and polyethylene terephthalate filaments. The calculated surface temperature of the fiber is somewhat lower than in the calculation by H. Sauer (Faserforschung Textilt. 7: 561, 1956) of the average temperature difference. The calculation is valid in general for all fibers which are melt spun.

Shinohara, Y. and Tanzawa, H.
STUDIES ON THE DRAWING OF VISCOSE RAYON. PT. 3. EFFECT OF THE DEGREE OF ORIENTATION ON DYNAMIC PROPERTIES. [1959] 8p.
Order from ATS $11.55 ATS-98L29J

Trans. of Kōbunshi Kagaku (Japan) 1957, v. 14, no. 150, p. 488-495.

Suzuki, M.
MECHANICS OF THE CREASE OF FABRICS. PART IV. CHANGE IN THE TWIST (HELIX) ANGLE ON BENDING A SINGLE YARN. [1959] 8p.
Order from ATS $12.20 ATS-01L30J

Trans. of Kōbunshi Kagaku (Japan) 1958, v. 15, no. 162, p. 647-653.

Weber, Fran.
A CONTRIBUTION TO THE SYSTEMATICS AND TECHNOLOGY OF THE DYEING OF THE SYNTHETIC FIBERS WITH DISPERSION DYES. [1959] 12p. (tables omitted) 34 refs.
Order from SLA mi$2.40, ph$3.30 59-15581

Trans. of [Klepzig's] Textil-Zeitschrift (East Germany) 1956, v. 58, no. 13, p. 516-518.

A survey is made of the types of dyes and techniques used in dispersion dying. Problems which arise and their various solutions are discussed.

Paints and Finishes

Lützkendorf, W.
COVERING POWER OF PIGMENTS AS A FUNCTION OF PARTICLE SIZE. [1959] 40p. (19 figs. 1 diag. omitted) 5 refs.
Order from SLA mi$3.00, ph$6.30 59-15974

Trans. of Farbe und Lack (West Germany) 1953, v. 59, no. 1, p. 7-16.

The following theoretical deductions are supported by examples and measurements with the electron microscope. The covering power of a pigment increases as particle size decreases until the particle size attains the wavelength of the light which it reflects, then it decreases suddenly and just below about half the wavelength it becomes completely transparent. For highest covering power, the dispersion of pigment particles in lacquers and paints must be below 1μ, but not below the wavelength of its color. For transparent water colors and printing inks for multicolor prints, however, a dispersion up to the colloidal solution may be necessary. (Lecture held at the 11th Trade Conference of the GDCh Trade Group "Pigments and Paint Substances," November 13, 1952, in Goslar.)

Oteren-Panhauser, K. A. van.
SWELLING OF COATINGS. [1959] 5p. 8 refs.
Order from SLA mi$1.80, ph$1.80 59-15674

Trans. of Deut[sche] Farben-Z[eitschrift] (West Germany) 1958, v. 12 [no. 2] p. 63-64.

Riese, Wolfram A.
PAINT DEFICIENCIES OF DISPERSION PAINTS AND THEIR PREVENTION. 12 June 59 [7]p. (4 tables omitted).
Order from SLA mi$1.80, ph$1.80 59-15875

Trans. of Farbe und Lack (West Germany) 1959, v. 65, no. 2, p. 72-75.

Paint failures, which may appear in the use, storage, or weathering of PVA-latexes, and suitable methods of their prevention are discussed. Particularly noteworthy is the effect of non-ionic additives. The article concludes with a short outline on the development of latexes and their outlook for the future.

Tephol, W.
RECENT EXPERIENCES IN ONE-COAT WHITE ENAMELLING. [1959].
Order from BISI £2 10s BISITS 1307

Trans. of Stahl u[nd] Eisen (West Germany) 1959 [v. 79] 19 Mar, p. 356-361.

Rubber and Elastomers

Grünfeld, Otto and Behrendt, Herman.
PROCESS FOR THE PREPARATION OF FACTICE. 23 Mar 59 [17]p.
Order from LC or SLA mi$2.40, ph$3.30 59-15405

Trans. of German patent 841 359, Glass 39b, Group 11, p27637 IVc/39bD, issued 13 May 54; pat. in Fed. Rep. of Germany from 29 Dec 48, pat. appl. pub. 19 July 51, granting of pat. pub. 30 Apr 52, by Herman Behrendt & Co., Utersen (Holstein).

A process is described for the production of synthetic india rubber. Presulfurized fatty acids, are subjected to heat together with dry metallic hydroxides, metallic hydrated oxides, or metallic oxides, or mixtures of the same, in the presence of sulfur and/or sulfurous substances and catalysts.

Mikach, R. and Obermeier, I.
COMPARATIVE TESTING OF VARIOUS ANTIOXIDANTS. [1958] [16]p.
Order from SLA mi$2.40, ph$3.30 59-10758

Trans. of Gummi und Asbest (West Germany) 1958, v. 11, no. 11, p. 682-694.

Comparative tests were made on 56 different antioxidants (ASM = AO) each used as 2 parts AO on rubber in a clear natural rubber formula. The effect of the AO was examined on vulcanization, heat aging, ozone attack, static open aging, and accompanying discoloration, dynamic aging and hot elongation aging (creep). A new and relatively simple apparatus was developed for tests on dynamic weathering, which permitted fine differentiations. The very different behavior of the individual AO compounds is shown by means of bargraphs, which can give many an indication in the development of rubber formulae.

Ostromislenskiy, I. I.
DETERMINATION. CLASSIFICATION AND EVALUATION OF RUBBERS. [1958] 20p. 14 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-10697

Trans. of [Zhurnal Obshchey Khimii] (USSR) 1915, v. 47, p. 1374-1401.

Schoon, Th. G. F.
NATURAL RUBBER AS A PACKING OF ELASTICALLY-DEFORMABLE SPHERO-COLLOIDAL MACROMOLECULES. [1958] [17]p. 31 refs.
Order from SLA mi$2.40, ph$3.30 59-10800

Trans. of Kolloid-Ges[ellschaft]. Verhandlungsber-[ichte] (West Germany) 1958, v. 18, p. 122-131 (Kolloid Zeitschrift (West Germany) 1958, v. 156, p. 122-132).

Micromorphological results of investigating natural rubber with the electron microscope contradict certain notions held up to now about rubber as a network of chain molecules. These results show rubber as consisting of clusters of distorted, ball-like molecules; the kinetic elasticity theory of W. Kuhn, H. Kuhn et al (Helv. Chim. Acta 26: 1934, 1943; 29: 1095 and 1634, 1946), as modified by James and Guth (J. Chem. Phys. 11: 455, 1943; 15: 669, 1947; and J. Polymer Sci. 24: 479, 1957), and Treloar (Physics of rubber elasticity, Oxford Univ. Press, N. Y., 1949) is applicable to this real system. The globular macromolecules in the so-called amorphous state can be interpreted as densely interwoven masses.

Wood and Paper

INFLUENCE OF ATMOSPHERIC HUMIDITY ON THE MOISTURE CONTENT OF PAPER. May 1959, 5p. (1 fig. omitted) 2 refs.
Order from SLA mi$1.80, ph$1.80 59-15970

Trans. of Allgem[eine] Papier-Rundschau (West Germany) 1958, [v. 6] no. 22, p. 1126-1129.

The states of equilibrium between the humidity of paper and of the atmosphere and methods of achieving them are discussed. A commercial device for measuring the moisture content of paper is described that can be used to control drying and humidifying processes which follow the conditioning of paper.

Aaltio, E[rkki] and Jouhikainen, P[ekka].
THE EFFECT OF SOME POLYSACCHARIDE ADDITION ON THE PROPERTIES OF PAPER. [1959] [15]p. 18 refs.
Order from SLA mi$2.40, ph$3.30 59-15723

Trans. of Paperi ja Puu (Finland) 1958, v. 40 [no. 11] p. 561-568.

Aspen hemicellulose, xylan isolated from oat hulls, locust bean gum or galactomannan, and sodium alginate were added to bleached spruce pulp which was submitted to beating tests in a Lampén beater. Paper chromatographic analysis showed that galactomannan has the greatest affinity for the cellulose fiber. The changes in the characteristics of the pulp were small for sodium alginate. Xylan and aspen hemicellulose improved the beatability, while the others had the opposite effect. Xylan gave excellent results. Hemicellulose isolated from agricultural waste products may be of importance as a paper additive.

Bolviken, A. and Giertz, H. W.
HIGH YIELD SULPHITE PULPING. [1958] 8p. 4 refs.
Order from SLA mi$1.80, ph$1.80 59-10251

Trans. of unidentified Norwegian mono.

Spruce wood was cooked at 170°C with sulfite liquors in the pH range of 3 to 7 (20°C). The liquors were prepared by adding different amounts of sulphur dioxide to neutral sodium sulphite solutions. The amount of combined SO_2 was kept constant at 7.6 per cent of the wood and the free SO_2 was varied between 2 and 6 per cent, also calculated as percentage of the wood. Such liquors contain a buffered system of sulphite-bisulphite. The pulps obtained were better digested than ordinary neutral sulfite semichemical pulps. Despite the high yield, ranging between 60 and 70 per cent, the pulps were easy to fiberize in an ordinary propeller disintegrator. Thus, they are not of semichemical nature but ordinary chemical pulps. There seems to exist a close relationship between pulp yield and the amount of SO_2 consumed. Suitable cooking conditions were found to be 4 to 5 hours at 170° with a liquor containing 6 to 8 per cent combined SO_2 and 4 to 5 per cent free SO_2 calculated as percentage of the wood. Pine wood may be cooked as well as spruce wood. The pulps thus obtained in a yield of about 65 per cent are very light in color and possess good papermaking properties. They are very easily beaten. Tensile strength, tear and folding endurance is the same or better than for ordinary strong sulphites.

Grohn, Hans and Schierbaum, Fritz.
ENZYMATIC DEGRADATION TESTS ON VIBRATORY BALL MILLED WOOD AND CELLULOSE (Enzymatische Abbauversuche and Schwinggemahlenem Holz und Zellstoff). [1959] [21]p. 46 refs. Trans. no. 4221.
Order from SLA mi$2.70, ph$4.80 59-15360

Trans. of Holzforschung (Germany) 1958, v. 12, no. 3, p. 65-73.

Separation of the ground substance into a water-soluble and a water-insoluble fraction makes possible a differentiated degradation by extracellular enzymes of Aspergillus oryzae. The enzymatic degradation of the water-insoluble fraction amounts to 20% of the original substance in optimal cases. Only 8% of the lignin fractions are degraded: this "degradation" may be regarded as a solubilization of parts of the lignin fractions which are chemically or physically associated with the degraded cellulose fractions.

Ullman, Uddo.
EXPERIENCES WITH WET STRENGTH MEASUREMENTS AS A PROCESS CONTROL METHOD. [1959] [17]p. 26 refs.
Order from SLA mi$2.40, ph$3.30 59-15179

Trans. of Svensk Pappers-tidning (Sweden) 1958, v. 61 [no. 14] p. 445-453.
Another translation is available from ATS $12.95 as ATS-82K25S [1958] 15p.

Reference is made to an instrument for measuring the wet strength of the sheet in paper making. Although the processing of the data derived from the apparatus is described, no complete description of the device itself is furnished.

MATHEMATICS

AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA MATEMATICHESKAYA, 1958, 1959 (News of the Academy of Sciences of the USSR. Mathematics Series).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

1958, v. 22, no. 6, p. 737-872, PB 141 031T-8
1959, v. 23, no. 1, p. 3-155, PB 141 031T-7

Consists of abstracts in English.

LENINGRAD U. VESTNIK (USSR) 1958, NO. 19, P. 5-208. SERIYA MATEMATIKI, MEKHANIKI I ASTRONOMII, NO. 4 (Herald of Leningrad University. Mathematics, Mechanics, and Astronomy Series). [1959] [17]p. SOV-43-58-19-(1-16)/16.
Order from OTS $0.60, $2.25/year PB 141 037T-4
Foreign $0.85, $3.25/year

Consists of abstracts in English.

MATEMATICHESKIY SBORNIK (USSR) 1958, 1959 (Mathematics Symposium).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

1958, v. 46, no. 4, p. 373-454, PB 141 033T-15
1959, v. 47, no. 1, p. 3-143, PB 141 033T-14

Consists of abstracts in English.

*PRIKLADNAYA MATEMATIKA I MEKHANIKA (USSR) 1958, V. 22, NO. 4, P. 426-576 (Applied Mathematics and Mechanics). [1959] 1v. SOV-40-22-4-(1-26)/26.
Order from OTS $0.60, $3.50/year PB 141 034T-7
Foreign $0.85, $5.00/year

Consists of abstracts in English.

PROBLEMS OF CONSTRUCTIVE DIRECTION IN MATHEMATICS. Table of Contents. 31 Mar 59, 1p. qd-3805.
Order from LC or SLA mi$1.80, ph$1.80 59-14681

Trans. of table of contents of A[kademiya] N[auk S]SSR. [Matematicheskiy Institut]. Trudy, 1958, v. 52.

*TEORIYA VEROYATNOSTEY I YEYE PRIMENENIYA (USSR) 1958, V. 3, NO. 1, P. 217-360 (Theory of Probability and its Applications). [1959] [24]p. SOV-52-3-3-(1-8)/8.
Order from OTS $0.50, $2.00/year PB 141 048T-4
Foreign $0.75, $3.00/year

Consists of abstracts in English.

UKRAINSKIY MATEMATICHESKIY ZHURNAL (USSR) 1958, V. 10, NO. 4, P. 351-466 (Ukrainian Mathematics Journal). [1959] [10] p-SOV-41-10-[4]-(1-11)/11.
Order from OTS $0.50, $2.00/year PB 141 035T-4
Foreign $0.75, $3.00/year

Consists of abstracts in English.

USPEKHI MATEMATICHESKIKH NAUK (USSR) 1958, V. 13, NO. 5, P. 3-241 (Progress of Mathematical Sciences). [1959] [17]p. SOV-42-13-5-(1-15)/15.
Order from OTS $0.60, $3.50/year PB 141 036T-7
Foreign $0.85, $5.00/year

Consists of abstracts in English.

Sansone, G.
ORTHOGONAL FUNCTIONS, REV. ENG. ED, tr. by Ainsley H. Diamond. Volume IX of Pure and Applied Mathematics: A Series of Texts and Monographs. 1959, 411p. Pub. by Interscience Publishers, Inc., New York, $11.00

Trans. of unidentified Italian mono.

The volume comprises the first four chapters of Sansone's Series Expansions of Orthogonal Functions. Chapter headings are entitled: (I) Expansion in series of orthogonal functions and preliminary notions of Hilbert space, (II) Expansions in Fourier series, (III) Expansions in series of Legendre polynomials and spherical harmonics, and (IV) Expansions in Laguerre and Hermite series. The two omitted chapters ("Approximation and interpolation" and "The Stieltjes integral") have no essential connection with the first four chapters. For the most part the translation is literal.

MECHANICS

REFERATIVNYY ZHURNAL. MEKHANIKA (USSR) 1957, 1958 (Journal of Abstracts, Mechanics).
Order from OTS $1.50, $8.00/6 mo.
Foreign $1.75, $9.50/6 mo.

1957, no. 9, p. 1-174, PB 141 124T-14
1958, no. 2, p. 40-108, PB 141 124T-13

Complete translations of those entries which were originally published in the USSR, excluding those abstracted elsewhere.

Basko, P. T.
STUDY OF RESISTANCE OF STEEL TO WEAR BY KAPRON (NYLON) THREAD [Issledovaniye Iznosoustoychivosti Stali pri Trenii Nit'yu Kaprona]. May 59, 700 words.
Order from HB $1.85 HB-4451

Trans. of Metallovedeniye i [Termicheskaya] Obrabotka Metallov (USSR) 1958, no. 12, p. 56-57.

Thin plates, 0.1 by 10 by 15 mm, of 0.50, 0.80, 1.0, and 1.20% C and 1.0, 1.5% Cr steels were subjected to abrasion by a kapron (synthetic) thread was investigated. The testing was carried out by means of an instrument in which the abrasion can be effected with a fibre moving at a desired speed and having a certain tension. The wear was determined on the basis of the depth of the recess formed after passage of 20,000 m of thread. The most wear-resistant proved to be the specimens made of steel U10A. The rate of wear is proportional to the thread tension and to the length of the thread which passed over. Within the limits of 10 to 70 m/min, the speed of the thread did not have any appreciable effect on the rate of wear.

Beresnev, B. I., Vereshchagin, L. F. and Ryabinin, Yu. N.
CHARACTERISTICS OF THE RHEOLOGICAL BEHAVIOR OF METALS EXTRUDED BY A LIQUID. [1959] 3400 words.
Order from LSA $10.20

Trans. of Akademiya Nauk SSSR. Otdel[eniye] Tekh[nicheskikh] Nauk. Izvestiya, 1957, no. 5, p. 48-55.

Bogolyubov, Nikolay Nikolayevich and Mitropol'skiy, Yuriy Aleksiyevich.
ASYMPTOTIC METHODS IN THE THEORY OF NON-LINEAR OSCILLATIONS, ed. by M. V. Yaltunovskaya-Brushlinskaya. [1959] [457]p. 55 refs. F-TS-9082/V.
Order from LC or SLA mi$11.10, ph$72.60 59-18102

Trans. of mono. Asimptoticheckiye Metody v Teoriy Nelineynykh Kolebaniy, Moscow, 1955.

The method of asymptotic expansion in powers of a small parameter in its modern form is described with respect to problems of nonlinear mechanics. Topics discussed are: natural oscillations in quasi-linear systems with one degree of freedom; the method of the phase plane; free relaxation type systems; the influence of external periodic forces; the method of the mean, for considering systems with many degrees of freedom; a mathematical justification of asymptotic methods, and a series of theorems on the existence and stability of periodic and quasi-periodic solutions.

Chechulin, B. B.
STUDY OF THE MICRO-NONUNIFORMITY OF THE PLASTIC DEFORMATIONS OF STEEL (Issledovaniye Mikroneodnorodnosti Plasticheckoy Deformatsii Stali) tr. by Mary L. Mahler. Aug 57, 21p. 3 refs.
Order from NASA. NACA TM 1411

Trans. of Fizika Metallov i Metallovedeniye (USSR) 1955, v. 1, no. 2, p. 251-260.

In 1949 Pashkov showed experimentally the enormous variation in strain from point to point in a polycrystalline metal. These large deviations from the mean strain are believed to have important effects upon the strength and flow characteristics of a metal. This work is continued in the present paper, in which the author presents a new statistical method for the study of nonuniform strains. By means of frequency diagrams of the axial inequality of the grains of a polycrystalline metal before and after loading, the average deviation of the strain from the mean can be determined. By this method it is shown that steel with an austenitic structure undergoes strains which differ much less from the mean than steels with ferritic or pearlitic structure. In the latter case, the deviations from the mean increase continuously with the mean strain.

Dolmatov, Ye. G. and Sitnikov, I. I.
A METHOD OF MEASURING THE SPEED OF THE PLASTIC FLOW OF STEEL UNDER EXPLOSIVE TENSION. [1959] [3]p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15802

Trans. of *Zavodskaya Laboratoriya (USSR) 1958 [v. 24] no. 5, p. 629-631.

Experiments are described which show that the nature of the deformation of test pieces in the presence of tension through the explosion of a powder charge differs from the deformation of test pieces in the presence of ordinary static tension. A much larger volume of metal is involved in deformation during dynamic tension than in static tension conditions. The plastic flow of metal with dynamic loads proceeds in the form of a wave process. If the stresses of the front of an

elastic wave are greater than the yield strength of the metal, then inevitably plastic flow of the test piece begins. A plastic wave travels after an elastic wave, but with much less velocity. An elastic wave is reflected from free surfaces in the form of a tension wave. At any moment of time elastic and plastic waves may meet each other and a neck forms at the point of their coincidence in respect of phases. These reflections and meetings of waves may be repeated many times, which leads to the formation of two or more necks.

Gershman, B. N. and Kovner, M. S.
ON SINGULARITIES OF QUASI-TRANSVERSE MAGNETOHYDRODYNAMIC WAVE PROPAGATION IN A PLASMA. [1959] 7p. (1 fig. omitted) 4 refs.
Order from MDF $7.00 MDF G-160

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedeniy]. Radiofizika (USSR) 1958, v. 1, no. 3, p. 19-24.

Ishlinsky, A. Yu.
ON THE THEORY OF THE GYROSCOPIC PENDULUM. [1959] 28p. 3 refs. F-TS-9289/V.
Order from LC or SLA mi$2.70, ph$4.80 59-18093

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1957, v. 21 [no. 1] p. 3-14.
Another translation is available from MDF $8.00 as MDF I-114 [1958] 16p.

Problems of the motion of a physical pendulum and of a 2-rotor gyroscopic compass were studied within the limits of elementary precession gyroscope theory. Final equations for the motion of the gyroscopic pendulum were derived that were valid for an arbitrary choice of the xyz coordinate system, with origin at the center of the Cardan suspension, and with the z axis directed along the rotor axis. Equations of the projections of the angular velocity and acceleration of the xyz coordinate system were also derived.

Mosikhin, E. P. and Vinogradov, G. V.
INVESTIGATION OF THE MECHANICAL PROPERTIES OF PLASTIC DISPERSED SYSTEMS UNDER CONDITIONS OF UNIAXIAL STRETCHING AND COMPRESSION. [1958] 19p. 6 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-10264

Trans. of *Kolloidnyy Zhurnal (USSR) 1957, v. 19, no. 3, p. 311-318.

A new method is suggested for investigation of the rheological properties of plastic dispersed systems by means of their study under conditions of uniaxial stretching and compression. Two apparatus for conducting similar investigations are described. On the example of homogenized Ca-greases, of Solidols, it was shown that the rupture of samples of plastic dispersed systems during stretching takes place in the direction of the effect of maximum tangential stretching, i.e., according to the mechanism of plastic rupture. In the direction of the effect of maximum tangential stresses, lines of sliding (lines of Lueders) are observed. During rupture, the neck of the samples in the direction perpendicular to their axis has the form of an oval. On the apparatus for the study of the uniaxial stretching the Young modulus of Solidol ($3 \cdot 10^3$ g/sq cm) was determined: within the limits of pure elastic deformation the relative elongations amount to 10ths parts of 1%. During deformations beyond the limits of pure elasticity a considerable plasticity of the greases is detected. The ratio of the limit tensile strength during stretching and the limit of shear strength (experiments in rotational elastometers) is about 2. Phenomena of hysteresis during stressing and destressing in the field of plastic deformations were examined: softening and thixotropy can appear in plastic dispersed systems during stretching, below the limit of tensile strength.

Ors Martinez, J.
TRANSMISSION OF ULTRASONIC VIBRATIONS IN METALS. [1959].
Order from BISI £6 10s BISITS-1273

Trans. of Inst[itute del] Hierro [y del] Acero (Spain) 1958 [v. 11] Oct-Dec, p. 263-281.

Ratner, S. B.
LAW OF STATIC FRICTION. [1959] 6p. 9 refs. T-3011.
Order from LC or SLA mi$1.80, ph$1.80 59-15157

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 83, no. 3, p. 443-446.

Considerations of the relationship between μ, the coefficient of friction, and N, the force pressing one body against the other, yield the relationship $F = \mu_0 N_0 + \mu_\infty N$, where μ_∞ is the minimum value of μ when $N \to \infty$; N_0 is the normal force of adhesion between bodies in the absence of an external load, and μ_0 is the coefficient of friction under the same conditions.

Tolokonnikov, L. A.
EQUATIONS OF THE NON-LINEAR THEORY OF ELASTICITY IN TERMS OF DISPLACEMENTS (Uravneniya Nelineinoy Teorii Uprogosti v Peremeshcheniyakh) tr. by A. Pingell. 1959, 13p. 7 refs. N R L Trans. no. 726.
Order from OTS $0.50 59-21004

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1957, v. 21, no. 6, p. 815-822.

Zel'dovich, Ya. B., Kormer, S. B. and others.
TEMPERATURE AND SPECIFIC HEAT OF PERSPEX COMPRESSED BY A SHOCK WAVE. [1959] 2p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15805

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1958, v. 122, no. 1, p. 48-50.

The emission of a shock wave front was observed through layers of not yet compressed substance and recorded by high-speed photochronographs in the blue (λ = 4,020 A) and red (λ = 6,000 A) parts of the spectrum. The method of measurement was similar to that employed by I. Sh. Model (Zhur. Eksp. i Teoret. Fiz. 32: 714, 1957). The temperature was

determined in polymethylmethacrylate $(C_5H_8O_2)n$ (perspex, plexiglas) with an initial density of 1.18 g/cc when the velocity of the shock wave was 16.5 km/sec. In the compressed state the density is 3.15 g/cc while pressure is 2×10^{12} dynes/sq cm. Three experiments showed that the brightness temperature measured in terms of emission intensity in the red region is 8,300°±500°K and the color temperature, determined by comparison intensities in the red and blue regions of the spectrum is 11,000°±1,000°K. If the energy of the perspex in the initial state is zero, the energy of the compressed perspex is 0.53×10^{12} ergs/g. If the major part of the pressure of compressed perspex is elastic pressure and the motions of the atoms are considered as vibrations, as in the views developed by L. D. Landau and K. P. Stanyukovich (Akademiya Nauk SSSR, Doklady 46: 339, 1945), the thermal pressure is about 1.3×10^{12} dynes/sq cm. Approximate calculations gave an elastic energy of 0.08×10^{12} ergs/g, which indicates that about 0.14×10^{12} ergs/g was expended to disrupt the chemical bonds.

Zubov, V. Ya.
TESTING SPRING STEEL STRIP FOR RELAXATION. May 59, 750 words.
Order from HB $2.35 HB-4515

Trans. of Zavodskaya Laboratoriya (USSR) 1956, v. 22, no. 3, p. 329-331.

Application of a method originally developed for determining the elastic limit of spring strip to the study of its relaxation. Procedure. Calculation of change in stress due to relaxation; plotting of relaxation curves on basis of results; variation of relaxational stress with holding time and temperature. Usefulness of method for relaxation testing of steels intended for high-temperature service. (HB abstract)

Aerodynamics and Pneumatics

TsAGI FACILITIES. 8 May 59 [5]p. (2 figs. omitted) 4 refs. AF 1255785.
Order from LC or SLA mi$1.80, ph$1.80 59-16336

Trans. from Soviet open sources, 1958.

A short description is given of the facilities of the Central Institute of Aero- and Hydrodynamics. The founders and other individuals who have been or are connected with the organization are listed.

Grohne, D.
ON THE SPECTRUM OF NATURAL OSCILLATIONS OF TWO-DIMENSIONAL LAMINAR FLOWS (Über das Spektrum bei Eigenschwingungen ebener Laminarströmungen) tr. by Mary L. Mahler. Dec 57, 34p. 13 refs.
Order from NASA NACA TM1417

Trans. of Zeitschrift für Angewandte Mathematik und Mechanik (Germany) 1954, v. 34, no. 8/9, p. 344-357.

If the stability of a laminar flow is investigated by the method of small oscillations, a complicated eigenvalue problem is encountered. Heretofore, attention has been directed toward the isolation of those normal modes of oscillation which are either neutrally stable or which grow in time. The present paper deals with the entire spectrum of characteristic values and the form taken by the associated oscillations.

Heisenberg, W.
ON THE STATISTICAL THEORY OF TURBULENCE (Zur statistischen Theorie der Turbulenz) tr. by Mary L. Mahler. Jan 58, 36p. 16 refs.
Order from NASA NACA TM1431

Trans. of Zeitschrift für Physik (Germany) 1948, v. 124, p. 628-657.

A study is made of the spectrum of isotropic turbulence with the aid of the customary method of Fourier analysis. The spectrum of the turbulent motion is derived to the smallest wave lenghts, that is, into the laminar region, and correlation functions and pressure fluctuations are calculated. A comparison with experimental results is included. Finally, an attempt is made to derive the numerical value of a constant characteristic of the enerty and dissipation in isotropic turbulence.

Oswatitsch, Klaus.
EXTREME SPEEDS AND THERMODYNAMIC STATES IN SUPERSONIC FLIGHT (Extreme Geschwindigkeiten und Thermische Zustände beim Uberschallflug) tr. by Mary L. Mahler. Apr 58, 39p. 9 refs.
Order from NASA NACA TM 1434

Trans. of Zeitschrift für Flugwissenschaften (West Germany) 1956, v. 4, no. 3/4, p. 95-108.

Typical of all cases of high-speed flow is the conversion of high kinetic energy into extreme thermodynamic states with temperatures of several thousand degrees; frequently, the gas is dissociated and ionized. A small sensitivity to high speeds is characteristic of gases of low molecular weight. With a minimum of mathematical and physical complexity, these matters are discussed in relation to meteors, shock tubes, ram jets, and rockets. The discussion is directed primarily to experts in neighboring fields and interested novices.

Mushtari, Kh. M. and Sachenkov, A. V.
STABILITY OF CYLINDRICAL AND CONICAL SHELLS OF CIRCULAR CROSS SECTION, WITH SIMULTANEOUS ACTION OF AXIAL COMPRESSION AND EXTERNAL NORMAL PRESSURE (Ob Ustoychivosti Tsilindricheskikh i Konicheskikh Obolochek Krugovogo Cecheniya pri Sovmestnom deystvii Osevogo Szhatiya i Vneshnego Normalnogo Davleniya) tr. by Mary L. Mahler. Apr 58, 15p. 7 refs.
Order from NASA NACA TM 1433

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1954, v. 18, no. 6, p. 667-674.

The expressions for the upper limit of critical loads are presented for cylindrical and conical shells under the combined action of uniform compression and isotropic external normal pressure. The differential equations for neutral equilibrium are solved for conical shells with simply supported boundaries. These solutions are used to obtain approximate expressions for the determination of the critical external pressure with simultaneous longitudinal compression. Also included is a discussion of the accuracy of the approximate expressions.

Zhornik, D.
ACROBATICS DURING DELAYED JUMPS (Vypolneniye Figur v Zatyazhnykh Pryzhkakh) tr. by Ira A. Minor. [1959] 8p. (12 figs. omitted). H-2445.
Order from LC or SLA mi$1.80, ph$1.80 59-16011

Trans. of Kryl'ya Rodiny (USSR) 1958, no. 7, p. 18-20

Figures accomplished by Russian parachutists during a period of free fall approaching 30 sec include forward and backward summersaults and figure eights. The system of scoring these acrobatics in competition is given, based on a total of 100 points for a perfect jump. However a larger score may be run up as each figure counts a specific amount. The aerodynamic forces involved are controlled by movements of the hands and legs. Clothing is prescribed for use during different times of the year.

Hydrodynamics, Hydraulics, and Hydrostatics

SYMMETRICAL CAVITATION FLOW AROUND A FLAT PLATE, SITUATED BETWEEN PARALLEL WALLS. [1959] [20]p. 3 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15095

Trans. from [Akademiya Nauk SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestiya] 1946, no. 4.

Solution and illustrations are given for the cases where (1) the walls around the plate recede to infinity, thus permitting free streamlines in which the jet pours back into the cavity, and (2) a jet flows around a plate between two walls in an infinite cavity.

Al'tshuler, L. V., Bakanova, A. A. and Trunin, R. F
PHASE TRANSFORMATIONS DURING COMPRESSION OF WATER BY STRONG SHOCK WAVES [1959] [4]p. 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15750

Trans. of Akad[emiya Nauk] SSSR. Doklady, 1958, v. 121, no. 1, p. 67-69.

Data are given for the shock compression of water from 20,000 to 800,000 atm. The dynamic adiabatic of water breaks down into two branches, the ends of which define the region of phase transition.

Gurevich, M. I.
THE IMPACT ON A LAMINA WITH DISCONTINUOUS STREAMLINE FLOW, tr. by Gerta Cohen and Hirsh Cohen. [1959] 8p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15414

Trans. of Prik[ladnaya] Mat[ematika] i Me[k]h[anika] (USSR) 1952, v. 16 [no. 1] p. 116.

In determining the added mass of a curved plane lamina about which there is a plane discontinuous streamline flow, and immobile contour with discontinuous streamline flow in a gravity free, ideally incompressible fluid is considered. The solution of the problem is based on methods from the theory of thin airfoils and the impact of an incompressible fluid.

Sretenskiy, L. N. and Voyt, S. S.
STUDY OF THE MOVEMENT OF A SHIP AND WORKING OF TESTING TANKS (CONFERENCES IN HOLLAND AND SPAIN). [1959] 2p.
Order from LC or SLA mi$1.80, ph$1.80 59-15785

Trans. of Akademiya Nauk SSSR. Vestnik, 1958, v. 28, no. 1, p. 91-93.

Topics of papers are noted which were given at the conferences held from Sept. 7 to 10th, 1959 at Wageningen, Holland and Sept. 15th at Madrid, Spain.

Yegorov, I. T.
IMPACT ON A COMPRESSIBLE FLUID (Udar o Szhimayemuyu Zhidkost) tr. by Mary L. Mahler. Feb 58, 12p. 5 refs.
Order from NASA NACA TM 1413

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1956, v. 20, no. 1, p. 67-72.

Theoretical solution is made of vertical hydrodynamic impact of a flat rigid body on the surface of a nonviscous compressible fluid. The solution is based on potential motion of the fluid. Rise of the fluid near the body is considered to be negligible. The equations permit calculation of histories of impact force and motion. Histories of kinetic energy and momentum for impacts at 5 m sec^{-1} on water, alcohol, and pentane are calculated.

METALLURGY

THE ABSTRACTS JOURNAL, METALLURGY, 1958, NO. 1. Mar 59, 62p.
Order from PP $50.00/year

Trans. of selected abstracts from Referativnyy Zhurnal. Metallurgiya (USSR) 1958, no. 1.

*FIZIKA METALLOV I METALLOVEDENIYE (USSR) 1958, V. 6, NO. 6, P. 961-1133 (Physics of Metals and Metallography). [1959] 1v. SOV-126-6-6-(1-25)/25.
Order from OTS $0.80, $4.75/year PB 141 126T-7
Foreign $1.05, $6.25/year

Consists of abstracts in English.

KOKS I KHIMIYA (USSR) 1959, NO. 1, P. 3-64 (Coke and Chemistry). [1959] 1v. SOV-68-59-1-(1-26)/26.
Order from OTS $0.50, $3.00/6 mo. PB 141 063T-14
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

METAL SCIENCE AND HEAT TREATMENT OF METALS, 1959, NO. 1. 1959, 72p. HB nos. 4474-4485.
Order from HB

Trans. of Metallovedeniye i Termicheskaya Obrabotka Metallov (USSR) 1959, no. 1, p. [2-61, and 64].

NAUCHNYYE DOKLADY VYSSHEY SHKOLY. METALLURGIYA (USSR) 1959, NO. 1, P. 3-264 (Scientific Reports of Higher Schools, Metallurgy). [1959] 1v. SOV-168-59-1-(1-50)/50.
Order from OTS $0.90, $3.50/year PB 141 133T-4
Foreign $1.15, $4.50/year

Consists of abstracts in English.

REFERATIVNYY ZHURNAL. METALLURGIYA (USSR) 1958, NO. 11 (Journal of Abstracts. Metallurgy) [1959] 1v. SOV-137-58-11-(21843-23863)
Order from OTS $1.90, $10.00/6 mo. PB 141 140T-14
Foreign $2.15, $11.50/6 mo.

Complete translations of those entries which were originally published in the USSR, excluding those periodicals which have been separately abstracted.

*ZAVODSKAYA LABORATORIYA (USSR) 1959, V. 25 (Plant Laboratory).
Order from OTS $1.00, $5.50/6 mo.
Foreign $1.25, $7.00/6 mo.

No. 1, p. 3-128, PB 141 027T-15
No. 3, p. 259-384, PB 141 027T-16

Consists of abstracts in English.

Albert, H. J. and Norton, J. T.
ISOTHERMAL SECTIONS (SLICES) IN THE SYSTEMS Mo-W-C AND Mo-Ti-C. [1958] 5p. [2 graphs 2 tables omitted].
Order from SLA mi$1.80, ph$1.80 59-10525

Trans. of Planseeberichte für Pulvermetallurgie (Austria) 1956, v. 4, no. 1, p. 2-6.

The alloys were prepared from powders of W, Mo, TiC and C. The compacts were either sintered in a resistance vacuum furnace with a vacuum of less than 1 micron or in an induction furnace under purified nitrogen. Since only the isothermal section at 1710°C was investigated, the primary attention was directed to the phases occurring at this temperature in the two component system. In the system W-C, W_2C and WC appear. In the system Ti-C only the TiC phase is present, which has a wide range of solubility for C. In the systems Mo-W and Mo-Ti complete miscibility exists at 1710°C. The Mo_2C field extends from 31.7 to 33.5 at.-% C. Alloys in the field of the MoC displayed a 3rd phase besides Mo_2C and free carbon. This is in good agreement with a compound which Notwony, Parthe, Kelfer et al designated as hexagonal with a = 3 kx, c = 15.48 kx. This MoC phase is stable at high temperatures and decomposes during cooling into Mo_2C. A single phase field of Mo_2C plus W_2C is present in the isothermal section of the system Mo-W-C at 1710°C. The solubility of W in MoC and Mo in WC is very limited. The isothermal section at 1710°C in the system Mo-Ti-C showed a small solubility of Ti in Mo_2C and also still smaller solubility of Ti in MoC. There is a large range of solubility of Mo in TiC where the solubility increases with increasing carbon content.

Alekseyev, E. M.
PROSPECTS FOR USING LOW-GRADE MANGANESE ORES IN THE PRODUCTION OF FERROMANGANESE AND SILICOMANGANESE. May 59, 2800 words.
Order from HB $6.90 HB-4562

Trans. of Stal' (USSR) 1958, v. 18, no. 7, p. 617-620.

Possibilities of producing ferromanganese and silicomanganese from high phosphorus oxide or carbonate manganese ores in electric furnaces. Comparative economics of B.-F. ferromanganese, electric-furnace ferromanganese from (a) oxide ores and (b) carbonate ores; and electric-furnace silicomanganese from oxide ores. Comparative specific capital cost. Conclusions: Any Mn ore, regardless of its P content, can serve economically in production of Fe-Mn & Si-Mn. (HB abstract)

Kachalkin, G. S.
STUDY OF BORON-ALLOYED HIGH CHROMIUM-NICKEL (HYPEREUTECTOID) CAST IRON [Issledovaniye Tverdogo Splava Tipa Sormayt, Legirovannogo Borom]. May 59, 1100 words.
Order from HB $2.90 HB-4452

Trans. of Metallovedeniye i [Termicheskaya] Obrabotka Metallov (USSR) 1958, no. 12, p. 58-61.

The optimum content of the individual elements in a "sormayt"-type alloy was determined from the point of view of ensuring a high wear resistance. The optimum content of individual elements is as follows: 2.75 to 3.5% C, 3 to 4% Si, 0.5 to 1.25% Mn, $\leq$ 0.05% P, $\leq$ 0.05% S, 24 to 30% Cr, 5 to 7% Ni, 0.2 to 0.5% B. This alloy has been designated as "Sormayt IV". The wear tests were first carried

out under laboratory conditions, in which the rubbing pair consisted of flat rotating disc; later, some of the components were tested under shop conditions. A linear relation was found between the content of boron in the alloy and the content of boron in the carbides and in the solution. The hardness of sormayt containing boron was higher by a few units than for the same material without boron. With increasing boron content up to 0.55%, the carbides of the alloys becomes finer. The coefficient of linear expansion of boron-containing sormayt approaches that of steel containing 0.4 to 0.6% C, particularly of the steel U8A. This results in a 5 to 10-fold increase in the service life of hard-faced components. Introduction of boron brings about a cost increase of 2 to 3% of the sormayt; the rate of burning-off of boron during the manufacture of boron-containing sormayt in high-frequency electric furnaces is 12 to 18%. The optimum thickness of layers hard-faced with sormayt is 0.5 to 2.5 mm; in individual cases, a thickness of 5 to 7 mm is permissible. Hard-facing with a thickness exceeding 1.5 mm has to be carried out in several layers.

Rossow, E.
CONSIDERATION OF THE PRECISION OF VICKERS AND ROCKWELL HARDNESS TESTS. [1959].
Order from BISI £4 10s BISITS-1348

Trans. of Met[aux] (Corr[osion]-Ind[ustries]) (France) 1955 [v. 30] Dec, p. 476-483.

Thews, Edmund R.
SIMPLE METHOD FOR THE QUALITATIVE DETERMINATION OF IMPURITIES IN FOUNDRY SCRAP. [1959] 9p.
Order from SLA mi$1.80, ph$1.80 59-15471

Trans. of Giessereipraxis (Germany) 1941, v. 61, no. 16, p. 213-217.

Zaytsev, G. P.
VICKERS AND ROCKWELL HARDNESS AS A FUNCTION OF PLASTICITY PARAMETERS OF A METAL AND CONDITIONS OF EXPERIMENT. [1959] 14p.
Order from ATS $12.95 ATS-66L29R

Trans. of Fiz[ika] Metal[lov] i Metalloved[eniya] (USSR) 1956, v. 2, no. 2, p. 339-350.

Ferrous Metals

*STAL' (USSR) 1959 [V. 19] NO. 4, P. 289-383. (Steel). [1959] 1v. SOV-133-59-4-(1-32)/32.
Order from OTS $0.70, $4.00/6 mo. PB 141 136T-14
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

Besnard, Simone and Talbot, Jean.
INFLUENCE OF THE PURITY OF IRON ON ITS BRITTLENESS AT LOW TEMPERATURE. [1959] 3p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-15720

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1958, v. 247 [no. 19] p. 1612-1613.

The tension curves of iron with different impurity contents were plotted at the temperature of liquid nitrogen. The samples exhibit a plastic deformation only if they have first been annealed below a given critical temperature, the value of which depends on the purity of the iron.

Bogatyrev, Yu. M. and Yeremina, V. P.
DISTORTION OF STEEL SURFACE-HARDENED BY INDUCTION HEATING [Deformatsiya Poverkhnostno Zakalennoy Stali]. May 59, 2300 words.
Order from HB $4.90 HB-4447

Trans. of Metallovedeniye i [Termicheskaya] Obrabotka Metallov (USSR) 1958, no. 12, p. 35-41.

The deformation of surface-hardened specimens of 0.45% C steel; 0.40% C, 0.60 Cr, 1.25 Ni steel; and 0.40% C, 0.90 Cr steel was determined as functions of the hardening temperature, the cooling speed, the initial structural state and the low-temperature tempering regime. The investigated specimens were in the shape of hollow cylinders of 55-, 105-, 50-mm od, 18-mm id and 15-, 15- and 100-mm height, respectively. An increase of the hardening temperature leads to an increase in the degree of deformation but does not affect the nature of the deformation. The influence of an increase in temperature is highest for the changes of the internal and external diameters and is less in the height of the specimens. In the case of surface induction hardening of important components, where it is necessary to maintain accurately the geometry and the dimensions in the process of heat treatment, particular attention must be paid to adhering to the optimum heating temperature during the hardening process. The highest hardening deformation is obtained in the case of cooling in water and the deformation is less in the case of cooling in oil. The deformation is somewhat smaller if the quenching is effected in a 30% solution of glycerin and a 5% solution of $KMnO_4$. However, the most important advantage of these quenching media is the prevention of crack formation. Preliminary heat treatment brings about some decrease in the deformation during the hardening process. Low-temperature tempering of the surface of hardened steel leads to a reduction in its dimensions and therefore such tempering will partly compensate changes in the height and in the internal diameter and will bring about an increase in the change of the external diameter.

Borzkyka, A. M. and Merlina, A. V.
HIGH-TEMPERATURE PROPERTIES OF MULTIPLE-ALLOYED FERRITE (Teploustoychivyye Svoystva Slozhnole-girovannogo Ferrita). May 59, 2400 words.
Order from HB $4.90 HB-4443

Trans. of Metallovedeniye i [Termicheskaya] Obrabotka Metallov (USSR) 1958, no. 12, p. 10-16.

Lack of literature data on effect of various elements on mechanical strength and ductility of alloyed ferrite at high temperatures. Authors' study of creep characteristics of ferrite alloyed with Cr, W, Mo, and Cb. Compositions studied: (1) 0.020% C, 0.42 Mn, 0.08 Si, 2.80 Cr, 0.32 W, 0.38 Mo; and (2) 0.015% C, 0.41 Mn, 0.30 Si, 2.71 Cr, 0.40 W, 0.45 Mo, 0.39 Cb. Microstructure and phase composition of steels after various heat treatments. Mechanical properties at room temperature and at 500 to 550° C. Data on rupture strength. Creep test results; extent to which they are influenced by the carbon content. Temper brittleness. Effect of Cb on creep characteristics and on impact strength at room temperature. (HB abstract)

Frehser, Josef.
ANISOTROPIC CHANGES OF DIMENSION IN THE HEAT TREATMENT OF LEDEBURITIC CHROMIUM TOOL STEELS. [1959] 19p. (2 tables 35 figs. omitted)
Order from SLA mi$2.40, ph$3.30 59-15819

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1953, v. 24 [no. 11/12] p. 483-495.

An investigation was made of the ledeburitic chrome steels with round 2% C and 12% Cr and of the not ledeburitic chrome-molybdenum steel with 1% C, 5% Cr and 1% Mo. In the cast state, the partial dimensional change was greatest in the direction of the crystallites, that is transversal to the axis of the block, and least transversal to the transcrystallization direction. It decreased with increasing deformation in the transversal direction to zero or to negative values and increases in the longitudinal direction to an average 0.08 to 0.12%. The partial dimensional change was less in the marginal zone than in the center zone. This difference decreased with increasing hardening temperature and then decreased. If the change was less in transversal direction than in longitudinal direction the maximum value and the zero value were at lower hardening temperatures. Practically the same partial dimensional change was found for the investigated ledeburitic steels, only the hardening temperatures for the maximum value and for the partial dimensional change equal zero are differently high. The chrome-molybdenum steel had approximately the same partial dimensional change in longitudinal and transversal direction and thus did not show an influence of direction. The total dimensional change is dependent on magnitude and direction of the deformation, hardening temperature and quenching agent. Practically the same behavior of dimensional change in hardening was observed at perforated plates as on solid plates. In measuring the dimensional changes in annealing, all dimensions were reduced as long as the annealing temperatures did not lie in the range of the disintegration of the residual austenite. The carbides lowered the thermal expansion of every steel. The ledeburitic steels with carbides arranged preferably in one direction showed an anisotropic thermal expansion, and thereby is the thermal expansion less in the direction of the carbide lines than transversally to it. The greatest dimensional changes took place in the direction of the least heat expansion. Results indicated that the anistropic dimensional change can be caused by the hindering action of the less contracting carbides on the basic mass taking place during the accelerated cooling in the hardening.

Tsylev, L. M.
SOFTENING TEMPERATURES OF IRON ORES AND SINTERS. May 59, 3900 words.
Order from HB $8.75 HB-4609

Trans. of Akad[emiya] Nauk SSSR. O[tdeleniye] T[ekhnischeskikh] N[auk]. Izvestiya, 1948, no. 6, p. 889-898.

Shortcomings of an evaluation of iron ores based only on their iron content and the composition of the gangue. Author's study of incipient softening temperature of various ores and sinters (fluxed and unfluxed). Composition of the 16 different ores and sinters studied. Experimental setup and procedure. Difference in temperatures of incipient softening between natural vs. partly reduced ores and underlying reason. Incipient-softening point of low-grade, easily reducible ores compared with rich ores. Importance of knowledge of temperatures of beginning and completion of softening for rational blast-furnace burdening. Particulars on formation of flushing slag. Usefulness of results of study for making up mixes for sintering and for maximum utilization of capacity of sintering machines. (HB abstract)

Light Metals

Bogdanova, V. V. and Kudelya, Ye. S.
SPECTRAL ANALYSIS OF CERTAIN TITANIUM ALLOYS AND THEIR WELD JOINTS (Spektral'nyy Analiz Nekotorykh Titanovykh Splavov i Svarnykh Shvov Etikh Splavov). [1959] [11]p. (3 figs. omitted) 4 refs. F-TS-9412/III.
Order from LC or SLA mi$2.40, ph$3.30 59-16068

Trans. of Avtomaticheskaya Svarka (USSR) 1957 [v. 10] no. 4(55), p. 29-32.

Methods for the quantitative spectral determination of Al, Cr, Fe, Si and C in titanium alloys and their weld joints, are described. The condensed sparking from the IG-2 generator and the high frequency sparking from a generator designed by the Institute for Electric Welding, are used in the form of light sources.

Petru, F., Hajek, B., and Prochazka, V.
THE PREPARATION OF METALLIC SCANDIUM IN COMPACT STATE. [1959] 1p. 2 refs.
Order from CCT $2.50 CCT-129-TT

Trans. of Chem[icke] Listy (Czechoslovakia) 1956, v. 50, p. 2025.

Metallic scandium was prepared by the reduction of scandium fluoride or chloride by calcium. The reaction was performed in a molybdenum crucible heated in an argon atmosphere in a high-frequency induction oven. The reaction, which began at the temperature of 700° to 800°C, was very violent and took place within a short length of time. The metallic scandium was separated by distillation by further heating to 1500° C (under pressure 10^{-4} mm Hg). It was obtained in a compact state, as a silvery, comparatively soft metal

which tarnishes in air. Its identity and purity were confirmed by chemical and spectral analysis.

Preobrazhenskaya, Yu. A.
EVALUATION OF HIGH-TEMPERATURE PROPERTIES FROM RUPTURE AND HOT-HARDNESS TESTS. May 59, 1100 words.
Order from HB $3.75 HB-4594

Trans. of Zavodskaya Laboratoriya (USSR) 1957, v. 23, no. 4, p. 485-487.

Study of effect of grain structure and state of grain boundaries in hot hardness tests on various aluminum alloys (including 2018 and 2024) to secure information on whether relatively short hot hardness tests may take the place of long-time rupture tests in the development of new high-temperature alloys. Experimental procedure and results. Comparative effects of constitution of grain itself and the state of the grain boundaries on hot hardness. Suggested combined use of hot-hardness and rupture tests in development work. (HB abstract)

Rohrig, H.
THE ADVANTAGES OF ADDITIONS OF TITANIUM TO ALUMINUM. [1959] 11p. 5 refs.
Order from SLA mi$2.40, ph$3.30 59-15713

Trans. of Metallwirtschaft [Metallwissenschaft, Metalltechnik] (Germany) 1931 [v. 10] 6 Feb, p. 105-111.

Nonferrous (except light) Metals

PRODUCING SELENIUM WITH A PURITY OF AT LEAST 99.99%. [29 May 59] 4p. 1 ref.
Order from RIS $6.25 RIS rept. 97033

Trans. of German patent application N 12 844 (12i, 17) DAS 1 035 113, filed 16 Oct 56, pub. 31 July 58, by Norddeutsche Affinerie, Hamburg. Another translation is available from RIS, $6.25, as RIS-96945 [24 Oct 58] 4p.

A process is given for producing selenium with a purity of at least 99.99% by simple or fractional distillation of crude or pure selenium. Mg powder is added, in amounts of 0.05 to 2.0% of the charge, before the distillation or fractionation. The distillation or fractionation is carried out under vacuum.

SOVIET ZIRCONIUM. 24 Apr 59 [10]p. 19 refs. AF 1255741.
Order from LC or SLA mi$1.80, ph$1.80 59-16477

Trans. from Soviet open sources, 1933-1958.

The present preliminary report is an attempt to present and analyze some of the more significant information relating to zirconium in the USSR with respect to its occurrence and availability, production, production methods, and applications.

TSVETNYYE METALLY (USSR) 1959 [V. 32] NO. 1, P. 1-103 (Nonferrous Metals). [1959] 1v. SOV-136-59-1-(1-24)/24.
Order from OTS $0.60, $3.50/6 mo. PB 141 139T-13
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

Fekete de Ragaly, Lancelot A.
THE MANGANESE DEPOSITS AT CERRO BOLIVAR, VENEZUELA. [1958] [18]p.
Order from SLA mi$2.40, ph$3.30 59-10982

Trans. of Revista de Hidrocarburos y Minas (Venezuela) 1951, v. 2, no. 3, p. 165-184.

The description of the manganese deposits of Estado Bolivar indicates that they are among the most important in the world. However, the prospecting and preliminary work is on its beginnings. In the Upata Region, good quality manganese ore is found in commercial quantities.

Structural Metallurgy and Corrosion

Borchers, Heinz and Saur, Günter.
EFFECT OF AUSTENITISING CONDITIONS ON THE STRUCTURE AND THE BEHAVIOR DURING TRANSFORMATION OF PLAIN CARBON STEELS. [1959] 25p. 52 refs.
Order from SLA mi$2.70, ph$4.80 59-15820

Trans. of Stahl und Eisen (West Germany) 1958 [v. 78, no. 1] p. 40-46.

A literature review on the influence of annealing and transformation conditions on the grain size, the structural consitituents and the transformation behavior in the pearlite of a hypoeutectic, plain carbon steel indicated that it is advantageous to more exactly differentiate between austenite grain size, network size, and ferrite grain size. The effect of long-time annealing at high temperature may not be accurately predicted. In the area of shorter annealing times and lower austenitizing temperatures, mathematical relationships may be easily seen. Basically increasing annealing temperature and time, increasing carbon content and increasing cooling rate lead to an increase of the ferrite grain size, the pearlite content and the undercooling of the Ar_3 and Ar_1, except for the effect of cooling rate on the ferrite grain size. Results of a special experiment using unalloyed steels with about 0.1 to 0.35% C concerning the influence of various temperatures of isothermal transformation confirmed the observations already made.

Chernyak, G. S.
ESTIMATION OF AMOUNT OF HAIRLINE CRACKS IN HEATS OF STEEL. May 59, 1900 words.
Order from HB $3.90 HB-4595

Trans. of Zavodskaya Laboratoriya (USSR) 1956, v. 22, no. 10, p. 1182-1185.

Shortcomings of current methods of estimating hairline cracks. Use of magnetic flaw detector; recommended procedure; best condition of heat treatment. Statistical analysis of results. Minimum number of specimens needed per heat for final and for intermediate inspections. Statistically significant (normal distribution) results for various criteria such as number of cracks; percentage of specimens with cracks having a certain specified total length, etc. Merits of proposed magnetic method. (HB abstract)

Noren, T. M. and Kindbom, L.
STRUCTURE OF NITRIDED HEAT TREATABLE STEELS. [1959].
Order from BISI £8 5s BISITS 1241

Trans. of Stahl u[nd] Eisen (West Germany) 1958 [v. 78] 25 Dec, p. 1881-1891.

Novikov, I. I. and others.
GRAIN OF SOLIDIFYING METAL REFINED BY VIBRATION. May 59, 900 words.
Order from HB $2.50 HB-4563

Trans. of Liteynoye Proizvodstvo (USSR) 1959, no. 2, p. 42.

Tests on applying low-frequency vibrations directly to solidifying metal instead of mold, to study the feasibility of refining the grain in this way. Vibrator; need for directional solidification to prevent the vibrating element from becoming entrapped by solidified metal. Results; importance of location of vibrating element in melt and of vibrating time. (HB abstract)

Rozenfel'd, I. L.
MECHANISM OF PROTECTION OF IRON AGAINST CORROSION BY SODIUM NITRITE. [1959] 5p. 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15732

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1951, v. 78, no. 3, p. 523-526.

Data are presented which indicate that sodium nitrite acts as corrosion inhibitor by slowing down the anodic process; consequently it must be classified as anodic inhibitor.

Tomashov, N. D. and Deryagina, O. G.
DETERMINATION OF SUSCEPTIBILITY TO INTERGRANULAR CORROSION OF WELDS IN STRUCTURES [Opredeleniye Sklonnosti Svarnogo Soyedineniya Metallicheskikh Konstruksiy k Mezhkristallitnoy Korrozii]. May 59, 1700 words.
Order from HB $4.25 HB-4461

Trans. of Zavodskaya Laboratoriya (USSR) 1957, v. 23, no. 6, p. 679-682.

Such welding seams as incline towards corrosion should be detected as soon as possible without cutting out. From publications in scientific periodicals it may be seen that one and the same type of steel will show different degrees of inclination towards corrosion according to different kinds of heat treatment, and herefrom it may be followed that there are welding seams at different points of the steel sample which are subjected to different kinds of thermal influence. A test method to be employed in the case of steel objects made of stainless chromium nickel steel 1X18H9T is described. As a solution, 5% HNO_3+1% $FeCl_3$ is taken. It is shown that displacement towards the negative side of the potential under the influence of the solution is particularly intense at the points of inter-crystal corrosion. This method is of great practical use because the steel objects investigated are not damaged. This principle also permits the construction of such apparatus as permit control of the inter-crystal corrosion properties of the steel seam without the loss of time.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

Frish, S. E.
THE EFFECTIVE CROSS-SECTIONS OF ATOMS FOR EXCITATION OF SPECTRA, tr. by R. C. Murray. Feb 58, 42p. (17 figs. omitted) 23 refs. NP-tr-75.
Order from LC or SLA mi$3.30, ph$7.80 59-14760

Trans. of Uspekhi Fizicheskikh Nauk (USSR) 1957, v. 61, no. 4, p. 461-490.

Discussions are presented on (1) processes determining spectrum line intensities, (2) the determination of effective cross sections by the electronic impact method, (3) previous experimental observations (Doklady Akad. Nauk SSSR 55: 971, 1954; Vestnik Leningrad. Univ. 11: 67, 1954; and Izvest. Akad. Nauk SSSR Ser. Fiz. 19: 5, 1955) of cascade transitions, (4) the significance of effective cross sections in relation to the excitation of spectral lines in a gas-discharge plasma, (5) excitation of resonance lines, (6) the extent of cascade excitation, and (7) the determination of effective cross sections for second-order collisions.

Khrgyan, A. Kh.
LARGE EXPLOSIONS AND ATMOSPHERIC EFFECTS. [1959] [7]p. 6 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15778

Trans. of Priroda (USSR) 1957 [v. 46] no. 3, p. 31-37.

Data are reviewed which indicate that the effect of explosions on general weather conditions is still not established and such an influence is improbable notwithstanding the fact that the products of the explosion, the anomalous ionisation of the air as well as the air waves, are observed at extremely long distances from the seats of explosion.

Instruments and Installations

Leistner, Manfred.
THE ABSOLUTE EFFICIENCY OF MEASURING WITH A COUNTER TUBE FOR THE ABSOLUTE CALIBRATION OF RADIOACTIVE ISOTOPES AND FOR OTHER QUANTITATIVE INVESTIGATIONS. [1959] [13]p. [Paragraph 7 final remarks omitted].
Order from SLA mi$2.40, ph$3.30 AEC-tr-3276

Partial trans. of Z[eitschrift für] Physik (Germany) 1955, v. 141 [no. 4] p. 463-475.

A simple presentation of the absolute efficiency of measuring with a counter tube is given and the necessary efficiency of a counter tube is summed up in an equation and discussed more in detail. The possibility of an experimental determination is investigated, using a γ counter tube and ways are pointed out to provide a quick determination for every radiator. Through comparison, it is then easy to obtain the absolute effectiveness of every counter tube.

Medvedev, M. N., Sokolova, E. S. and others.
TIME CHARACTERISTICS OF PHOTOMULTIPLIERS (Vremennye Kharakteristiki Fotoumnozhiteley) tr. by C. M. Gordon. 1959, 7p. NRL Trans. no. 723.
Order from OTS $0.50 59-21003

Trans. of *Pribory i Tekhnika Eksperimenta (USSR) 1958, no. 4, p. 37-39.

Wang, Chia-p'ing
MULTICHANNEL DIFFERENTIAL DISCRIMINATOR. 6 Apr 59, 2p. 1 ref. JPRS: 645-D.
Order from OTS $0.50 59-11498

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1957, no. 4, p. 110.

A 10-channel differential discriminator of the Sands type (Elmore and Sands, Electronic-experimental techniques, p 243, McGraw-Hill Book Company, New York, 1949) is described on which installation was started in 1955 by the Chinese People's Republic for use in cosmic-ray or nuclear-radiation research.

Nuclear Engineering and Power

NUCLEAR POWER STATIONS IN THE USSR (TECHNICAL DATA). 30 Mar 59 [9]p. 48 refs. AF 1255669.
Order from LC or SLA mi$1.80, ph$1.80 59-16469

Trans. from Soviet open sources, 1955-1958.

A summary is given of available technical data on the following nuclear power stations: (1) Obninsk Station of the Academy of Sciences, 5,000 kw (in operation); (2) Siberian Station, 600,000 kw (first section, 100,000 kw, in operation); (3) Beloyarsk Station, 400,000 kw (under construction); (4) Voronezh Station, 420,000 kw (under construction); (5) Ul'yanovsk Station, 50,000 kw (under construction); and (6) Leningrad Station, 420,000 kw (planned).

OPERATION PLAN OF THE NUCLEAR FUEL DEVELOPMENT CORPORATION. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 AEC-tr-3431

Trans. from Nihon Keizai Shimbun (Japan) 1957, 25 Nov.

PERSONNEL SUPPLIES AND PERSONAL EQUIPMENT

Nei, Tokio, Yoshimoto, Chiyoshi and others.
EFFECTS OF COLD-WEATHER CLOTHING ON SKIN TEMPERATURE DISTRIBUTION DURING EXPOSURE TO LOW TEMPERATURES. [1959] [9]p. 3 refs. Hokkaido U. Inst. of Low Temperature Sciences Research Paper no. 359).
Order from SLA mi$1.80, ph$1.80 59-15459

Trans. from Teion Kagaku. Series B. (Japan) 1956, no. 14.

Five subjects were exposed in protective clothing of Japanese manufacture which was made of various combinations of materials (nylon quilted with down, nylon quiled with nylon floss, "aluminum fabric" lined with nylon pile, nylon lined with nylon pile) to temperature of -40° C with a wind velocity of 10 miles/sec for 35 min. Skin temperature was measured by means of thermocouples attached to instep, shin, thigh, upper arm and abdomen. Insulation of the upper arm was found to be imperfect in all cases. Nylon-pile-lined clothing was found to be inferior to the quilted garments.

PHYSICS

AKADEMIYA NAUK ARMYANSKOY SSR, YEREVAN. IZVESTIYA. SERIYA FIZIKO-MATEMATICHESKIKH NAUK, 1958, VOL. 11, NO. 5, P. 3-127 (News of the Academy of Sciences of the Armenian SSR. Physico-mathematical Series). [1959] [11]p. SOV-22-11-5-(1-9)/9.
Order from OTS $0.50, $3.00/6 mo. PB 141 017T-2
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

*AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA FIZICHESKAYA, 1958, 1959 (News of the Academy of Sciences of the USSR, Physics Series).
Order from OTS $0.80, $4.50/6 mo.
Foreign $1.05, $6.00/6 mo.

1958, v. 22, no. 12, p. 1422-1540, PB 141 041T-11
1959, v. 23, no. 1, p. 2-152, PB 141 041T-12

Consists of abstracts in English.

FIZIKA V SHKOLE (USSR) 1959, NO. 2, P. 1-95 (Physics in School). [1959] 1v. SOV-47-59-2-(1-31)/31.
Order from OTS $0.50, $3.00/year PB 141 040T-6

Consists of abstracts in English.

MOSCOW U. VESTNIK. SERIYA MATEMATIKI, MEKHANIKI, ASTRONOMII, FIZIKI, KHIMII (USSR) 1958 [V. 13] (Herald of Moscow University. [Mathematics, Mechanics, Astronomy, Physics, Chemistry Series]).
Order from OTS $0.50, $3.00/year
Foreign $0.75, $4.50/year

No. 1, p. 3-239, PB 141 051T-1
No. 2, p. 3-253, PB 141 051T-3
No. 3, p. 3-237, PB 141 051T-2
No. 4, p. 3-238, PB 141 051T-4
No. 5, p. 3-216, PB 141 051T-5

Consists of abstracts in English.

REFERATIVNYY ZHURNAL. FIZIKA (USSR) 1959, NO. 3. (Soviet Abstracts. Physics). 26 June 59, 122p JPRS: 1731-N.
Order from OTS $1.00 59-13671

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Section K. Optics

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia, excluding the Soviet Union.

REFERATIVNYY ZHURNAL. FIZIKA (USSR) 1959, NO. 4 (Soviet Abstracts. Physics). 13 July 59, 98p. JPRS: 1771-N.
Order from OTS $1.00 59-13719

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Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia, excluding the Soviet Union.

*ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI (USSR) 1958, 1959 (Journal of Experimental and Theoretical Physics).
Order from OTS $1.40, $7.50/6 mo.
Foreign $1.65, $9.00/6 mo.

1958, v. 34, no. 3, p. 537-782, PB 141 052T-14
1958, v. 35, no. 4, p. 833-1064, PB 141 052T-12
1959, v. 36, no. 1, p. 3-344, PB 141 052T-13
1959, v. 36, no. 3, p. 649-966, PB 141 052T-11

Consists of abstracts in English.

*ZHURNAL TEKHNICHESKOY FIZIKI (USSR) 1958, [V. 28] NO. 11, P. 2357-2642 (Journal of Technical Physics). [1959] 1v. SOV-57-28-11-(1-32)/32.
Order from OTS $1.00, $5.50/6 mo. PB 141 053T-13
Foreign $1.25, $7.00/6 mo.

Consists of abstracts in English.

Kawaguchi, T[atsuro].
RELATION BETWEEN THE MECHANICAL PROPERTIES AND DRAW RATIO OF VISCOELASTIC MATERIALS. [1959] 18p. 5 refs.
Order from SLA mi$2.40, ph$3.30 59-15790

Trans. of [Kōbunshi Kagaku] (Japan) 1957, v. 14 [no. 144] p. 176-183.

The changes were calculated which arise in the modulus of rigidity, n, and the modulus of elasticity, E, on drawing a viscoelastic substance. Consideration was given to the effects of the change in the internal energy due to deformation, E increased with draw. Only with an isotropic substance did E = 3n.

Miramoto, Kenro.
COMPARISON OF WAVE OPTICS AND GEOMETRICAL OPTICS BY FOURIER ANALYSIS. PART 3. IMAGE EVALUATION BY SPOT DIAGRAMS. [1959] 15p. 11 refs. T-2901.
Order from SLA mi$2.40, ph$3.30 59-15276

Trans. of [Oyô Butsuri] (Japan) 1958, v. 27, no. 10, p. 585-590.

Results of previous studies of optical systems by Fourier analyses in which optical systems are treated as special-frequency filters (J. Opt. Soc. Am. 48: 57 and 567, 1958) and by information theory (Phil. Trans. Roy. Soc. London [A]247: 369, 1955; and J. Opt. Soc. Am. 46: 740, 1956) are applied to geometric optics. Although the objects are assumed to be incoherently illuminated, results may be extended to partially coherent illumination if the aberrations are relatively large.

Sommerfeld [A.] and Bethe [H.].
[ELECTRONIC THEORY OF METALS.] II. ELECTRONS IN THE PERIODIC POTENTIAL FIELD. (Electronentheorie der Metalle. II). [1958] [146]p.
Order from SLA mi$7.20, pn$22.80 59-10887

Trans. of mono. Handbuch der Physik, 2.ed., v. 34, pt. 2: Aufbau der Zusammenhängenden Materie, Berlin, 1933 [p. 499-579.] (Sec. E.c. omitted)

Sections translated are: (D) Electrical conductivity; interaction of the electrons with lattice vibrations, and (E) More complicated effects. In (D) are considered preliminary ideas, Bloch's theory (assumption of thermal equilibrium of the lattice waves), Peierls' "Umklapp processes", and supplements to the theory. Under (E) are discussed Galvanomagnetic effects and thermoelectric effects. A section on radiation effects is not included.

Acoustics

Brillouin, J.
REFLECTION AND REFRACTION OF ACOUSTIC WAVES BY A SHOCK WAVE (Réflexion et Réfraction d'Ondes Acoustiques par une Onde de Choc) tr. by Mary L. Mahler. July 57, 42p. 3 refs.
Order from NASA NACA TM 1409

Trans. of Acustica (Switzerland) 1955, v. 5, no. 3, p. 149-163.

This paper treats the problem of reflection and refraction of sound waves by a plane, uniform shock wave separating two regions, in both of which the fluid pressure and temperature are originally in equilibrium. Calculations are made of conditions that prevail in the two regions after the equilibrium in either one or the other region has been upset by incidence of a plane, uniform acoustic wave. Dynamic relationships show that the amplitude of reflected waves is always less than that of the incident wave, but the amplitude of refracted waves may, in certain cases, be greater than that of the incident wave.

Exner, Marie Luise.
INVESTIGATION OF APERIODIC TIME PROCESSES WITH AUTOCORRELATION AND FOURIER ANALYSIS (Untersuchung unperiodischer Zeitvorgänge mit der Autokorrelations-und der Fourieranalyse) tr. by S. Reiss. Mar 58, 44p. 9 refs.
Order from NASA NACA TM 1404

Trans. of Acustica (Switzerland) 1954, v. 4, no. 3, p. 365-379.

Autocorrelation and frequency analyses of a series of aperiodic time events, in particular, filtered noises and sibilant sounds, were made. The position and band width of the frequency ranges are best obtained from the frequency analysis, but the energies contained in the several bands are most easily obtained from the autocorrelation function. The mean number of zero crossings of the time function was determined from the curvature of the latter function in the vicinity of the zero crossing, and also with the aid of a decimal counter. The second method was found to be more exact.

Slonimskiy, G. L.
ON THE QUESTION OF SOUND ABSORPTION IN SOLIDS (K Voprosy ob Obsorbtsii Zbuka v Tverdykh Telakh) tr. by A. Pingell. 1959 [11]p. 1 ref. N R L Trans. no. 711.
Order from OTS $0.50 59-11923

Trans. of Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (USSR) 1937, v. 7, no. 12, p. 1457-1462.

An examination is made of the absorption of plane sound waves in solids due to the splitting of the incident wave into two waves of other frequencies. This process is induced by the presence of cubic terms in the expression for the density of elastic energy which are considered as perturbations. The effect proves to be possible (in the first approximation) only for longitudinal incident waves.

Tartakovskiy, B. D.
ALL-UNION ACOUSTICS CONFERENCE (NO. 4). [1959] 4p.
Order from LC or SLA mi$1.80, ph$1.80 59-15780

Trans. of *Akusticheskiy Zhurnal (USSR) 1958, v. 4, no. 3, p. 292-294.

General topics are given for most of the 173 papers presented at the conference, which was held in Moscow from May 26th to June 4th, 1958.

Electricity and Magnetism

Belov, K. P. and Zaytseva, M. A.
NEW MAGNETIC MATERIALS; FERRITES-GARNETS. [1959] 10p. 15 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15724

Trans. of Uspekhi Fizicheskikh Nauk (USSR) 1958, v. 66, no. 1, p. 141-144.

Present knowledge on ferrite-garnets is reviewed. All references but one are non-Soviet.

[Bennetot, M. de].
[ON THE CALCULATION OF PERMANENT MAGNETS OF TUBULAR FORM]. [1958] 15p. [figs. omitted].
Order from SLA mi$2.40, ph$3.30 59-10209

Partial trans. (p. 208-214) of Annales de Radioélectricité (France) 1954, v. 9, no. 36 [p. 193-216].

The distribution of the "fictitious" magnetic masses equivalent to a magnet are numerically calculated from the geometrical dimensions of the magnet and the demagnetization curve of the magnetic steel used. The solution is unique and admits a law of similitude relative to the geometrical dimensions.

Fel'dshteyn, Ya. I. and Kurdina, Ye. I.
MAGNETIC VARIATIONS IN THE REGION OF THE AURORAL ZONE. 11p. 2 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15569

Trans. of Problemy Artiki (USSR) 1958, no. 3, p. 53-59.

H, D, and Z components were recorded at the

Dickson Island station and at various distances from the observatory. The magnetic field variations had the same general character at distances of 180 km in latitude and 300 in longitude as at the observatory. Closeness of correlation at other points was markedly dependent on the bearing, although at about 10 km no changes in the character of the variations were observed. At 800 km the Z variations were frequently in opposite phase.

Koster, Werner.
THE RELATIONSHIPS OF MAGNETIC PROPERTIES, ESPECIALLY THE COERCIVE FORCE TO THE STRUCTURE OF THE ALLOYS AND THE DEVELOPMENT OF NEW TYPES OF MAGNET ALLOYS. [1959] 6p. (10 figs. omitted) 13 refs.
Order from SLA mi$1.80, ph$1.80 59-15816

Trans. of Z[ei]ts[chrift] f[ür] Elektrochemie (Germany) 1932, v. 38 [no. 8a] p. 549-553.

Misme, Pierre.
THE CORRELATION BETWEEN THE ELECTRIC FIELD AT A GREAT DISTANCE AND A NEW RADIO-METEOROLOGICAL PARAMETER (Correlation entre le Champ Electrique à Grand Distance et un Nouveau Parametre Radio-Meteorologique) tr. by M. C. Thompson, Jr. and Ann Fails. 24 Oct 57 [19]p. 5 refs. NBS Rept. 5530.
Order from SLA $2.40, ph$3.30 59-10560

Trans. of unidentified French mono.

An attempt is made to define a new radio-meteorological parameter, based on the thermodynamic properties of the atmosphere, which will correlate with the instantaneous values of the electric field beyond the horizon. The thermodynamic stability of the atmosphere can be evaluated by the work required to raise an elementary volume of air at the earth's surface to the lower level of that part of the atmosphere common to the lobes of the transmitting and receiving antennas. The stability is a function of the atmospheric conditions between the surface and the level considered. For equal attenuations, the modified gradient, G_M, which best describes the atmosphere is a function of the form $G - aT$, where T is the work of instability, a is a constant which is determined experimentally and whose dimensions are $M^{-1}L^{-3}T^2$, and G is the useful refractive index gradient. For 1046-mc transmission over the 370-km path from Cheyenne Mountain to Garden City, a was 1/2, but it appears to vary with T for large values of T.

Molecular Physics and Spectroscopy

*OPTIKA I SPEKTROSKOPIYA (USSR) 1959, V. 6 (Optics and Spectroscopy)
Order from OTS $0.70, $4.00/6 mo.
Foreign $0.95, $5.50/6 mo.

No. 2, p. 129-272, PB 141 047T-15
No. 3, p. 273-428, PB 141 047T-14
No. 4, p. 429-572, PB 141 047T-16

Consists of abstracts in English.

Sventitskiy, N. S.
SPECTRAL DETERMINATION OF CERTAIN METALLOIDS. 25 Mar 59, 11p. 11 refs. TS-42.
Order from LC or SLA mi$2.40, ph$3.30 59-14680

Trans. of A[kademiya] N[auk] SSSR. Izv[estiya. Seriya Fizicheskaya] 1947, v. 11, no. 3, p. 319-325.

Results are presented on the determination of phosphorus, carbon, and sulfur in metals by a previously described spectral analysis. (Akademiya Nauk SSSR. Izvestiya. Seriya Fiz. 9: 691, 699, and 703, 1945).

Solid State Physics

*KRISTALLOGRAFIYA [MOSCOW] (USSR) 1958, VOL. 3, NO. 6 P. 655-772 (Crystallography). [1959] 1v. SOV-70-3-6-(1-25)/25.
Order from OTS $0.70, $4.00/year PB 141 065T-6
Foreign $0.95, $5.50/year

Consists of abstracts in English.

PRODUCTION OF HIGH-PURITY, CRYSTALLINE SILICON CARBIDE. [29 May 59] 4p.
Order from RIS $6.25 RIS rept. 97024

Trans. of German patent application W 23 076 (12i, 37) DAS 1 047 180, filed 3 Apr 58, pub. 24 Dec 58, by Wacker-Chemie G. m. b. H., Munich.

A particularly pure silicon carbide can be obtained if gaseous alkylated silanes, such as monomethylsilane, or alkylated halosilanes, such as trichloromethylsilane, are heated directly or indirectly until silicon carbide is formed. For indirect heating, e. g., via a hot inert wall or a hot silicon carbide rod, a temperature range of 600° to 1100°C is most suitable. A gray to brown-colored powder results. This powder is heated to 1800° to 2000°C in an inert atmosphere or in vacuo for several hours to turn into coarse-crystalline carbide. An alternative heating method consists in reacting the gaseous starting material in a high-frequency electromagnetic field, e. g., in an electron torch, to form a fine-grain silicon carbide. The product so obtained is especially pure because the surrounding vessel walls may be kept cold, only the gaseous starting product being heated.

Astreyeva, O. M. and Lopatnikova, L. Ya.
THE COMPOSITION AND PROPERTIES OF HYDRATED CALCIUM SULFOALUMINATE (Sostav i Svoystva Gidrosulfoalyuminata Kaltsiya). [1959] 5p. (3 figs. and 3 tables omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-15775

Trans. of Tsement (USSR) 1957, v. 23, no. 6, p. 11-15.

Chemical and microscopic analyses and electron diffraction analysis showed that the composition and structure of the hydrated calcium sulfoaluminates obtained from C_3A, C_5A_3, C_4AF, and C_6A_2F are different. Only with the mineral C_3A is a sulfoaluminate obtained which closely approaches the composition trisulfated hydrated calcium sulfoaluminate. With the aid of these new products and reference to their different composition and structure, it appears possible to explain the variable stability of the hydrated sulfoaluminates with time. Electron microscopic study of the structure of crystals of hydrated calcium sulfoaluminate dried under different conditions showed that part of the water of crystallization can be driven off from these compounds without breaking down the original crystal form, but with formation of voids within the body of the crystal. Further removal of water leads to destruction of the crystals.

Baskin, M. L. and Semerchan, A. A.
GROWTH AND TWINNING OF CRYSTALS UNDER THE INFLUENCE OF IONIZING RADIATION. [1959] 4p. (1 fig. omitted) TF-4910.
Order from LC or SLA mi$1.80, ph$1.80 59-15784

Trans. of Akad[emiya] Nauk SSSR. Vestnik, 1958, v. 28 [no. 1] p. 69-70.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as 59-15266 [1959] 3p.

A special cascade type high voltage accelerator with an electron beam emerging through a "Lenard window" made of 12 to 15μ aluminum foil was used to study the twinning of Al_2O_3 crystals. The size of the crystals was dependant upon the strength of the radiation. X-rays may be used industrially to eliminate cracks and other defects inside monocrystalline bodies.

Bogolyubov, N. N., Tolmachev, V. V., and Shirkov, D. V.
A NEW METHOD IN THE THEORY OF SUPERCONDUCTIVITY. [1959] 130p.
Order from CB $5.75

Trans. of a Russian mono.

The volume presents the further development of a new method in this theory which was recently proposed by one of the authors: calculations are given for the energy of the superconducting ground state using Frohlich's Hamiltonian, as well as the one-Fermion and collective elementary excited state: a detailed analysis of the role of the Coulomb interaction between the electrons in the theory of superconductivity is provided; a system of Fermions is treated with a fourth-order interaction Hamiltonian to establish the criterion for its superconductivity. Chapter headings are: Introduction (outline of the present state of superconductivity theory); Fröhlich's model of superconductivity; Renormalized theory of superconductivity in Fröhlich's model; Spectrum of collective excitations in the superconducting state; Inclusion of the Coulomb interaction between electrons; Qualitative descriptions of effects due to Coulomb interaction; Fermi systems with weak interaction; Conclusion (thermodynamics and electrodynamics of the superconducing state).

Davydov, A. S.
THEORY OF ABSORPTION SPECTRA OF MOLECULAR CRYSTALS. [1959] 13p. 12 refs. T-2896.
Order from LC or SLA mi$2.40, ph$3.30 59-15308

Trans. of Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (USSR) 1948, v. 18, no. 2, p. 210-218.

A general theory of energy states of electrons in molecular crystals is used to explain some properties of absorption spectra of naphthalene- and anthrocene-type monoclinic crystals. It is shown that nondegenerate energy levels in crystals of this type are displaced and split into two components, each having a different polarization. It is shown that the discrete character of the absorption lines is not explained by the narrowness of energy levels of the crystal, but by the selection rules for the optical transitions in the crystal. Optical transitions are possible only at entirely definite values of wave numbers.

Gerhard, H.
DELAYED FORMATION OF CRYSTALS. [1959] 3p.
Order from ATS $3.95 ATS-38L30G

Trans. of Mikrokosmos (West Germany) 1956, v. 45, p. 103-105.

Grüneisen, E.
THE STATE OF A SOLID BODY (Zustand des festen Körpers) tr. by S. Reiss. Feb 59, 76p. 129 refs.
Order from NASA NASA RE 2-18-59W

Trans. of Handbuch der Physik (Germany) 1926, v. 10, p. 1-52.
Another translation is available from SLA mi$6.00, ph$18.30 as 59-10953 [1958] 115p.

For abstract see 59-10953 above.

Grüneisen, E.
THE STATE OF SOLIDS. [1958] 115p. 168 refs.
Order from SLA mi$6.00, ph$18.30 59-10953

Trans. of Handbuch der Physik (Germany) 1926, v. 10, p. 1-52.

Discussions are presented on the definition of a solid; the crystal lattice structure of solids; division of elements and compounds into different crystal systems; space filling of atoms in the solid state; the G. Mie hypothesis of forces which change according to a power of the reciprocal atomic distance; heat of sublimation and compressibility of monatomic substances for absolute zero; electrostatic cohesion in heteropolar lattices; interpretation of the repulsion force in terms of electrostatics on the basis of Bohr's atom models; lattice energy and compressibility of heteropolar lattices at absolute zero; the electrical cohesion in homopolar lattices; the thermal energy of monatomic crystal lattices without group formation; thermal

energy of the remaining crystal lattices; thermal energy at high temperatures; the free energy and the entropy of solids; the equations of state of solids; variability of atomic frequencies during deformation with respect to the Madelung-Einstein frequency formula; the equation of state for isotropic or monatomic solids with regular crystallization on assumption of the law of exponential forces; change of state for steady volume; the relation of the specific heats for substances with only one γ; adiabatic change of state; isothermal change of state; change of state at a constant pressure; calculation of the limiting frequency (θ) from the ratio of the expansion coefficient to the atomic heat; thermal expansion of irregular crystals; thermal expansion of hexagonal crystals (zinc, cadmium); and the ratio of the mean oscillation amplitude to the atomic distance.

Lushchik, Ch. B.
NEW METHODS OF INVESTIGATION OF RELAXATION PROCESSES AND TRAPPING CENTERS IN CRYSTAL PHOSPHORS. [1959] 14p. 31 refs.
T-3014.
Order from LC or SLA mi$2.40, ph$3.30 59-15487

Trans. of Optika i Spektroskopiya (USSR) 1957, v. 2, no. 2, p. 220-228.

New methods are examined for investigation relaxation processes. These methods include the measurement of the dependence of the absorption of trapping centers, or of the intensity of the optically stimulated luminescence upon temperature when the excited phosphor is heated with a steady rate or by impulses. Some applications of the methods of thermal bleaching and thermoluminescence for studying the mechanism and kinetics of luminescence and the trapping centers in phosphors, have also been examined.

Mizetskaya, L. B., Trofimenko, A. I., and Fursenko, V. D.
METHOD OF OBTAINING CdS, CdSe SINGLE CRYSTALS AND MIXED CdS + CdSe SINGLE CRYSTALS. [1959] 11p. 2 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15729

Trans. of Zhurnal Neorganicheskoy Khimii (USSR) 1958, v. 3, no. 10, p. 2236-2239.

A method based on that of Bishop and Liebson (J. Appl. Phys. 24: 660, 1953) was developed for obtaining CdS, CdSe single crystals and mixed CdS + CdSe crystals, employing metallic cadmium and elementary sulfur (selenium) as initial substances. The reaction was conducted in an argon atmosphere at a temperature of about 1000°. The advantage of this method versus the method of Frerichs (Phys. Review 72:594, 1947) was in the absence of hydrogen sulfide. The cadmium and sulfur (selenium) vapors, absorbed by the argon current, are uniformly delivered to the reaction space where they enter into reaction and form cadmium sulfide or selenide single crystals. The respective heating temperatures for each of the vapors are selected so that the vapor tension and resilience of cadmium and sulfur (selenium) are approximately equal. Optimum conditions for the synthesis of CdS are temperatures of 1060° to 1070° in the reaction space, 650° in the vaporization zone of cadmium, and 300° to 350° in the vaporization zone of sulfur.

Nacken, R.
HYDROTHERMAL MINERAL SYNTHESIS AS A BASIS FOR GROWING QUARTZ CRYSTALS. [1959] 23p. (1 fig. omitted) 5 refs.
Order from SLA mi$2.70, ph$4.80 59-15718

Trans. of Chemiker Zeitung (East Germany) 1950, v. 74, no. 50, p. 745-749.

The theory of hydrothermal mineral synthesis is presented. Quartz crystals have been successfully grown. The research work in the USA based on these experiments is discussed.

Tarasova, L. I. and Feofilov, P. P.
POLARIZATION OF LUMINESCENCE AND THE NATURE OF LUMINESCENT CENTERS IN NaCl-Ag and KCl-Tl CRYSTALS. [1959] 4p. 9 refs.
T-3027.
Order from LC or SLA mi$1.80, ph$1.80 59-15721

Trans. of Optika i Spektroskopiya (USSR) 1958, v. 4, no. 5, p. 696-697.

Vodop'yanov, K. A. and Galibina, G. I.
DIELECTRIC LOSS IN SIMPLE AND MIXED ALKALI HALIDE CRYSTALS AT HIGH FREQUENCIES. [1959] 13p. 19 refs. T-3041.
Order from LC or SLA mi$2.40, ph$3.30 59-15878

Trans. of *Akademiya Nauk SSSR. Izvestiya. Ser[iya] Fiz[icheskaya] 1958, v. 22, no. 3, p. 288-295.

Measurements at 3×10^5 to 10^8 c, over the 20° to 300°C temperature range, indicated that the loss angle in simple crystals changes from one crystal to another in complete agreement with the change in all physicochemical characteristics of these crystals. The loss in simple crystals, in crystals of solid solutions and in crystals with $CaCl_2$, $BaCl_2$ and $MgCl_2$ impurities is added up from relaxation and ohmic losses, which develop in proportion to the decrease in frequency and increase in temperature. The lower the frequency and the higher the temperature, the more the impurities change the size of the loss angle. A small content of impurity, let us say, of an order of several hundredths of a mole percent (according to synthesis), changes the thermal dependence of tan δ very appreciably by considerably increasing the loss angle at high temperatures.

Voronova, A. A. and Vaynshteyn, B. K.
ELECTRON DIFFRACTION STUDY OF $CuCl_2 \cdot 3Cu(OH)_2$. [1959] 15p. 15 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15876

Trans. of *Kristallografiya, Moscow (USSR) 1958, v. 3, no. 4, p. 444-451.

Wagenknecht, Friedrich.
DIELECTRIC AND MAGNETIC PROPERTIES OF SOME FERRITES AT HIGH FREQUENCIES. [1959] 40p. 33 refs.
Order from SLA mi$3.00, ph$6.30 59-10995

Trans. of Frequenz (Germany) 1951, v. 5, no. 6, p. 145-155.

Mg, Mn, Fe, Ni, Cu, Pb and CuPb ferrites were prepared by different procedures and their dielectric and magnetic properties were measured between 170×10^6 and 3285×10^6 c. The FeO-Fe_2O_3 system shows a marked irregularity in the characteristic values at 72.5 molar percent Fe_2O_3, which in X-ray images marks the boundary between a homogeneous and a heterogeneous range. The frequency curve of the dielectric constant depends on the structure. As the frequency increases, the decrease is flat in cubic ferrites, but steep in ferrites with low crystal symmetry (on account of permanent dipoles). The dielectric losses, too, are higher in ferrites with low symmetry. In a number of cubic ferrites, the polarization components were analyzed. There is a relationship between the magnitude of atomic polarization and the magnetic properties.

Yatsimirskiy, K. B.
THE THERMOCHEMISTRY OF TRANSITION METAL COMPOUNDS AND THE THEORY OF CRYSTAL FIELDS. [1959] 23p. 19 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-15728

Trans. of Zhurnal Neorganicheskoy Khimii (USSR) 1958, v. 3, no. 10, p. 2244-2252.

The lattice energy values for salts, oxides, and hydroxides of metals from the fourth column of Mendeleev's periodic system are computed. The increase of lattice energy on account of the effect of crystal fields of the corresponding anions (Δ) is found. The value Δ remains constant for a large group of iron (II), cobalt (II), nickel, and copper salts and coincides approximately with the increase of heats of hydration of the corresponding ions on account of the effect of water dipoles surrounding the ions. The Δ values calculated from thermochemical data are somewhat greater than the values calculated from optical data. Magnitude Δ is greater for trivalent elements than for compounds of bivalent elements. Δ is greater for the compounds of the fifth column elements than for the corresponding compounds from the fourth column. It is shown that in the case of chlorides, bromides, iodides, oxides, hydroxides, and oxygen acid salts of elements from the fourth column the difference between the heats of formation of compounds of one and the same metal remains constant for the given pair of anions. This rule is applicable to the verification of the known heats of formation of $Fe(HCO_2)_2$, $Fe(NO_3)_2$, and $NiCO_3$.

Yosida, Zyungo.
QUANTITATIVE STUDY OF THE METAMORPHISM OF SNOW CRYSTALS BY SUBLIMATION. May 58 [11]p. 5 refs. Translation 57.
Order from SLA mi$2.40, ph$3.30 59-15585

Trans. of mono. Yuki no Kesshō no Shōka Henkei ni Tsuite no Teiryō-teki Kosatsu.

Theoretical Physics

USPEKHI FIZICHESKIKH NAUK (USSR) 1958, 1959 (Progress of Physical Sciences).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

1958, v. 66, no. 3, p. 353-542, PB 141 049T-14
1959, v. 67, no. 3, p. 377-548, PB 141 049T-13

Consists of abstracts in English.

Bogolyubov, N. N. and Shirkov, D. V.
INTRODUCTION TO THE THEORY OF QUANTIZED FIELDS. Table of Contents and Summary. 28 Oct 57, 1p. AF 1141769.
Order from LC or SLA mi$1.80, ph$1.80 59-18416

Trans. from mono. Vvedeniye v Teoriyu Kvantovannykh Poley, Moscow, 1957.

This report forwards a Soviet publication entitled "VVEDENIYE V TEORIYU KVANTOVANNYKH POLEY" written by N. N. Bogolyubov and D. V. Shirkov and published in Moscow in 1957 by the State Publishing House of Technical and Theoretical Literature.
Contents:
Chap. 1. Classical theory of free fields
Chap. 2. Quantum theory of free fields
Chap. 3. Diffusion matrix
Chap. 4. Elimination of divergences on S-matrixes
Chap. 5. Application of the general theory of elimination of divergences to concrete cases
Chap. 6. Schroedinger's equation and dynamic variables
Chap. 7. Method of functional neutralization
Chap. 8. Renormalizing group
Chap. 9. Dispersion correlations
This book deals with new trends of the theory of quantized fields developed up to 1957. It is intended for theoretical physicists dealing with nuclear physics and the physics of high power elementary particles, and for mathematicians studying the applications of the theory of generalized functions. (The translation is published here in its entirety.)

Bolotovskiy, B. M.
THEORY OF THE VAVILOV-CHERENKOV EFFECT, PART I-THE VAVILOV-CHERENKOV EFFECT IN AN ISOTROPIC MEDIUM, tr. by R. P. Illwitzer. 23 Mar 59 [57]p. 216 refs. TG 230-T57.
Order from OTS $1.50 59-21009

Trans. of Uspekhi Fizicheskikh Nauk (USSR) 1957, v. 62, no. 3, p. 201ff.

A survey is presented of theoretical examinations of the Vavilov-Cherenkov effect (Doklady Akad. Nauk SSSR 2: 451 and 457, 1934) in an unbounded, isotropic medium.

Landau, L. D., Abrikosov, A. A., and Khalatnikov, I. M.
THE ELECTRON MASS IN QUANTUM ELECTRODYNAMICS (Massa Elektrona v Kuantovoy Elektrodinamike) tr. by Richard B. Mudge. [1958] [14]p. 3 refs. (foreign text included) UCRL Trans. 373.
Order from LC or SLA mi$2.40, ph$3.30 59-10381

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 96 no. 2, p. 261-264.

Corrections are examined for an asymptotic expression previously obtained (Akademiya Nauk SSSR. Doklady 95: 773, 1954) for Green's function of an electron $\bar{G}(p)$, which was true for $p \gg m$. The form
$$G(p) = \beta(p^2)/[\hat{p} - m(p^2)],$$
is proposed for the function where $m(p^2)$ is a new, slowly varying function of p^2.

Tarasov, Yu. A.
ON THE PROBLEM OF BOUND FERMION AND ANTIFERMION STATES IN QUANTUM FIELD THEORY. 15 Jan 59, 9p. 12 refs. TT-28.
Order from LC or SLA mi$1.80, ph$1.80 59-10994

Trans. of Nauchnyye Doklady Vysshey Shkoly. Fiz[iko]-mate [maticheskiye Nauki] (USSR) 1958, no. 1, p. 84-88.

A general method is analyzed for investigating bound fermion and anti-fermion states.

Yefros, D. A.
CONSTRUCTION OF FREE STREAMLINE FLOWS BY THE METHOD OF ELECTRICAL SIMULATION, tr. by George Skarshinski and Hirsh Cohen. 12 may 58 [15]p. 4 refs. RPI MathTrans no. 1.
Order from LC or SLA mi$2.40, ph$3.30 59-14367

Trans. from Akademiya Nauk SSSR. O[tdeleniye T[ekhnicheskikh] N[auk]. Izvestiya, 1947, no. 9.

Methods of solution, on the electro-integrator of L. J. Gutenmacher (See [ref. 1]) of problems of free streamline flows are discussed and the results of the solutions are shown.

Thermodynamics

Labuda, A. A., Martinkov, E. G., and Nekrashevich, L. G.
ON THE MEASUREMENT OF THE TEMPERATURE OF THE CLOUD OF LUMINOUS VAPOURS IN PULSED ELECTRIC DISCHARGES, tr. by A. N. Dellis. Sep 58, 11p. (3 figs. omitted) 7 refs.
Order from LC or SLA mi$2.40, ph$3.30 NP-tr-194

Trans. of *Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1958, v. 22, no. 6, p. 720-724.

Use of Ornstein's method for measuring the temperature of luminous gases and vapor is justified only if the volume and time of the recording are sufficiently small for the temperature to be considered constant and for equilibrium to be assumed. In testing for violations of these two conditions, single-shot discharges through a thin metallic wire, $d \leq 0.05$mm, were investigated in air at 1 atm. It is shown that the method may be used only by taking into account the zonal distribution and time dependance of the excitation of the spectral lines. It is not possible to calculate the values of the temperature by this method from the relative intensity of two spectral lines with significantly differing higher level energy values.

Styushchin, N. G. and Sterman, L. S.
THE EFFECT OF VELOCITY OF MOTION OF A FLUID ON HEAT TRANSFER DURING BOILING. [1959] [10]p. 12 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-1781

Trans. of [Zhurnal Tekhnicheskoy Fiziki] (USSR) 1951, v. 21, p. 448-452.

Experiments showed that for low heat fluxes the heat transfer coefficient, α, does not depend upon the specific heat flux, q, but is determined by the velocity of the stirring of the fluid. This is in agreement with previous literature (e.g., L. Austin, Mitt. Forschungsarb. 7: 75, 1903). For higher values of q (above 35,000 kcal/sq m/hr), α was found to depend both on q and on the velocity of circulation. In dimensionless terms, $\alpha_w/\alpha_0 = [(w - q/r\gamma'')/(q/r\gamma'')]^{0.18}$ where α_w and α_0 are the heat transfer coefficients with and without forced circulation, respectively, w is the circulation velocity, and $q/r\gamma''$ is the rate of vaporization.

Wave Propagation

Braude, S. Ya. and Bass, F. G.
FEASIBILITY OF DETERMINING DISTRIBUTION FUNCTIONS OF SCATTERERS ON AN AGITATED SEA SURFACE BY THE RADAR METHOD. 1 June 59, 3p. 3 refs. JPRS: 1614-N.
Order from OTS $0.50 59-13547

Trans. of Izvestiya Vysshikh Uchebnykh Zavedeniy. Radiofizika (USSR) 1958, v. 1, no. 3, p. 161-162.

Ginzburg, V. L. and Zheleznyakov, V. V.
ON THE ABSORPTION AND EMISSION OF ELECTROMAGNETIC WAVES BY A MAGNETOACTIVE PLASMA. [1959] 9p. 12 refs.
Order from MDF $9.00 MDF G-159

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedeniy]. Radiofizika (USSR) 1958 [v. 1] no. 2, p. 59-65.

As follows from the Kirchhoff theorem, the thermal emission of a magnetoactive plasma is especially large at those frequencies to which correspond large values of the refractive index for normal waves in this medium. In general, the frequencies mentioned do not agree with the frequency $\omega_H = \frac{eH_0}{mc}$. On the other hand, the electrons rotating in a nonrelativistic plasma with the gyro-frequency ω_H must, seemingly emit and absorb basically at this same frequency. A

solution of this paradox is contained herein, which is essential, for example, in the theory of sporadic solar radio emission.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ACADEMY OF SCIENCES OF THE KAZAKHSKAYA SSR. 20 May 59 [43]p. 15 refs. AF 1255813.
Order from LC or SLA mi$3.30, ph$7.80 59-16485

Trans. from Soviet open sources, 1955-1958.

The administrative structure and scope of the Academy of Sciences of Kazakhstan are described. A history of the organization and its present plans for expansion are given. Biographies of some of its more important members, are included.

AKADEMIYA NAUK SSSR. DOKLADY, 1958, 1959 (Reports of the Academy of Sciences of the USSR).
Order from OTS $1.40, $20.00/6 mo.
Foreign $1.65, $24.50/6 mo.

1958, v. 122, no. 6, p. 959-1131, PB 141 015T-22
1958, v. 123, no. 4, p. 583-767, PB 141 015T-25
1958, v. 123, no. 6, p. 959-1139, PB 141 015T-24
1959, v. 124, no. 1, p. 11-240, PB 141 015T-23
1959, v. 124, no. 2, p. 249-496, PB 141 015T-21

Consists of abstracts in English.

AKADEMIYA NAUK SSSR. OTDELENIYE TEKHNICHESKIKH NAUK. IZVESTIYA, 1958 (News of the Academy of Sciences of the USSR, Department of Technical Sciences).
Order from OTS $1.00, $5.50/6 mo.
Foreign $1.00, $7.00/6 mo.

No. 10, p. 3-160, PB 141 019T-8
No. 12, p. 3-153, PB 141 019T-7

Consists of abstracts in English.

AKADEMIYA NAUK URSR, KIEV. DOPOVIDI, 1959, NO. 1, P. 3-106 (Reports of the Academy of Sciences UKR SSR). [1959] 1v. SOV-21-59-1-(1-26)/26.
Order from OTS $0.60, $3.50/6 mo. PB 141 016T-11
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

COLLECTION OF PAPERS ON MATHEMATICAL LOGIC AND ITS APPLICATION TO PROBLEMS OF CYBERNETICS. Table of Contents. 31 Mar 59 [1]p. qd-3804.
Order from LC or SLA mi$1.80, ph$1.80 59-14682

Trans. of table of contents of A[kademiya] N[auk S]SSR. [Matematicheskiy Institut. Trudy, 1958, v. 51.

*IZMERITEL'NAYA TEKHNIKA (USSR) 1959, NO. 3, P. 1-64 (Measurement Techniques). [1959] 1v. SOV-115-59-3-(1-29)/29.
Order from OTS $0.70, $4.00/year PB 141 112T-7
Foreign $0.95, $5.50/year

Consists of abstracts in English.

K'O HSÜEH T'UNG PAO: EXTRACTS. 25 Mar 59, 13p. JPRS: 1389-N.
Order from OTS $0.50 59-13340

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1958, no. 14, p. 441-443, 445-447.

Contents:
Network of scientific research rapidly taking shape on a nation-wide scale, by Yang Hsuan-yen, et al.
Highlights of the Third Congress of the International Federation of Prestressed Concrete [held in West Berlin on May 5 to 10, 1958], by Chu Chen-te.

NAUKA I ZHIZN' (USSR) 1959, [V. 26] NO. 2, P. 1-80 (Science and Life). [1959] 1v. SOV-25-59-2-(1-48)/48.
Order from OTS $0.70, $4.00/6 mo. PB 141 020T-13
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

SCIENCE AND SCIENTIFIC INSTITUTIONS. 30 Apr 59, 219p. JPRS: 691-D.
Order from OTS $3.50 59-11540

Trans. of mono. Bol'shaya Sovetskaya Entsiklopedia (USSR) 1957, v. 50, p. 430-510.

Brief descriptions are presented of the achievements of Soviet science by separate categories as follows: (1) mathematics; (2) astronomy, geodesy and geophysics; (3) physics; (4) chemistry; (5) mechanics; (6) the technical sciences; (7) geological sciences; (8) geography (physical); (9) biology; (10) agriculture; and (11) medicine.

SCIENTIFIC INFORMATION REPT.
Order from OTS $2.75, $28.00/year

19 June 59, PB 131 891T-24
3 July 59, PB 131 891T-25

Consists of unevaluated information extracted from publications of USSR, Eastern Europe, and China.

Rozentsveig, V. Yu.
THE WORK IN THE SOVIET UNION ON MACHINE TRANSLATION FROM FOREIGN LANGUAGES INTO RUSSIAN AND FROM RUSSIAN INTO FOREIGN LANGUAGES. Rept. no. 4 of International Congress of Slavicists. [1959] [15]p. 8 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15461

Trans. of mono. Raboty po Mashinnomu Perevodu s Inostrannykh Yazykov na Russkiy i s Russkogo na Inostrannyye v Sovetskom Soyuze, Moscow, 1958.

The status of machine translation in the USSR is described. The Institute of Precision Mechanics and Computer Technology (USSR Academy of Science) has compiled dictionaries and algorithms for translation from English, Chinese and Japanese into Russian. A German-Russian algorithm is being developed. The Steklov Mathematical Institute of the Academy has developed algorithms for translation from French, English and Hungarian into Russian. The English-Russian algorithm (by T. N. Moloshnaya) is based on a determination of correspondences between the grammatical structures of the 2 languages, and contains elementary structures called configurations, the analysis of which proceeds independently of the language into which the text is to be translated. O. S. Kulagina has developed a system of "elementary operators" of the simplest steps of the translation process, whereby generalizations in the making of algorithms can be attained. Kulagina's "set theory" is briefly discussed. N. D. Andreyev is working on an abstract logical system designed to serve as a symbolic intermediary language. Reference is made to the work of the first All-Union Conference on Machine Translation held in May 1958, which was attended by representatives of 79 institutions.

Photographic Equipment

Geertsen, G. I.
PHOTOGRAPHIC READING OF SUBSCRIBERS' REGISTERS (Fotografering af Samtaletaellere). [1958] [13]p.
Order from SLA mi$2.40, ph$3.30 59-10956

Trans. of Teleteknik. Danish Ed. (Denmark) 1957, (foreign text included) v. 8 [no. 3-4] P. 171-175.

Several different methods of photographing subscribers' registers, and a camera developed at the KTAS are discussed; this camera is constructed for the special purpose of obtaining reflection-free, high-contrast photographs.

Khalfin, A. M.
THE ELECTRONIC AMPLIFICATION OF IMAGES. [1959] [12]p. 20 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15829

Trans. of Tekhnika Kino i Televideniya (USSR) 1958, no. 9, p. 10-19.

The possibility is considered of using electronic image converters as light amplifiers in cinephotography. Illumination required for filming can be reduced a hundred- or a thousand-fold when using this method.

SOCIAL SCIENCES

CENTRAL INSTITUTIONS AND HIGH COMMAND AGENCIES OF THE USSR MINISTRY OF NATIONAL DEFENSE. 19 Oct 53 [79]p. 54 refs. AF 601856.
Order from LC or SLA mi$4.50, ph$12.30 59-16958

Trans. from Soviet open sources.

A complete description is given of the present Soviet military organization and its evolution. The information was obtained from laws, decrees, and administrative regulations appearing in the Collection of Decisions and Orders of the Council of Ministers of the USSR (Sobraniye Postanovleniy i Resheniy Soveta Ministrov SSSR), the Gazette of the Supreme Soviet of the USSR (Vedomosti Verkhovnogo Soveta SSR), the yearbook of the USSR Ministry of Justice (Sovetskoye Administrativnoye Pravo) of various years, and other encyclopedic works and "more or less reliable books, issued by the... Soviet Government". The decree of 12 November 1923, entitled Statute of the People's Commissariat of Military and Maritime Affairs of the USSR, is appended.

Emperaire, J.
DEMOGRAPHIC EVOLUTION OF THE ALAKALUF INDIANS. MISSION OF L. ROBIN AND J. EMPERAIRE 1946-1948 (Evolution Démographique des Indiens Alakaluf. Mission de L. Robin et J. Emperaire 1946-1948). [1959] 12p.
Order from SLA mi$2.40, ph$3.30 59-15608

Trans. of Soc[iété] des Américanistes de Paris. J[ournal] (France) 1950, N. S., v. 39, p. 187-218.

A history of the social and environmental changes in the life of the Alakaluf Indians of Tierra del Fuego from 1600 to 1948 is given.

BOOK REVIEWS

The following book reviews can be ordered by number from OTS for 50 cents. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and a detailed table of contents. The length of each review is indicated at the end of the entry.

BR-SOV/1460
Bleshinskiy, S. V., and V. F. Abramova
KHIMIYA INDIYA (Chemistry of Indium) Frunze, Akad. nauk Kirgizskoy SSR, 1958. 370 p. 500 copies printed.

Based on past literature and on the authors' own research up to 1956. 15p.

BR-SOV/1524
Sigorskiy, Vitaliy Petrovich
METODY ANALIZA ELEKTRICHESKIKH SKHEM S MNOGOPOLYUSNYMI ELEMENTAMI (Methods of Analyzing Electric Networks With Multipolar Elements) Kiyev, Izd-vo An Ukrainskoy SSR, 1958. 401 p. 5,000 copies printed.

Devoted to the linear theory of circuits and its application to the analysis of vacuum tubes and transistors. 5p.

BR-SOV/1569
Moscow. Vyssheye tekhnicheskoye uchilishche
TEKHNOLOGIYA PRIBOROSTROYENIYA; SBORNIK STATEY (Instrument-making Technology; Collection of Articles) Moscow, Oborongiz, 1958. 185 p. (Series: Its: /Trudy/ vyp. 90) 3,800 copies printed.

Deals with problems of automatic machine tool adjustments. 2p.

BR-SOV/1570
Akademiya nauk Latviyskoy SSR. Riga
NAUKA - PROIZVODSTVU; KRATKIYE ANNOTATSII RABOT, VYPOLNENNYKH DLYA PROMYSHLENNOSTI I STROITEL'STVA, VYP. 3 (Science for Production; Short Annotation of Works Accomplished for Industry and Building, Nr 3) Riga, Izd-vo AN Latviyskoy SSR, 1958. 89 p. 1,000 copies printed.

Contains studies on the use of radioactive isotopes in production in machine and instrument manufacture, in the technology of wood processing, the chemical industry, and building materials. A new chapter was added on industrial economics. 3p.

BR-SOV/1572
Konson, Aron Solomonovich
EKONOMICHESKAYA EFFEKTIVNOST' NOVOY TEKHNIKI (Economic Efficiency of New Technology and Equipment) Moscow, Gospolitizdat, 1958. 390 p. 10,000 copies printed.

Presents the basic theory and methods for determining the economic efficiency of new technology. 4p.

BR-SOV/1586
TEKHNOLOGICHESKIY SPRAVOCHNIK PO KOVKE I OB"YEMNOY SHTAMPOVKE (Handbook on Open and Closed Die Forging) Moscow, Mashgiz, 1959. 966 p. 15,000 copies printed.

Contains information on processes of forging and hot closed die forming as carried out on various kinds of forging and pressing machinery. 12p.

BR-SOV/1618
VNEDRENIYE STATISTICHESKOGO METODA V MASHINOSTROYENII; OPYT ZAVODOV V OBLASTI STATISTICHESKOGO KONTROLYA KACHESTVA PRODUKTSII I ANALIZA TEKHNOLOGICHESKIKH PROTSESSOV (Application of the Statistical Control of Production Quality and Analysis of Technological Processes) Moscow, Mashgiz, 1051. 126 p. 7,000 copies printed.

Intended for engineering and technical personnel and shop foreman in machinery manufacturing establishments. 2p.

BR-SOV/1632
Kuz'min, Iosif Iosifovich
O GOSUDARSTVENNOM PLANE RAZVITIYA NARODNOGO KHOZYAYSTVA SSSR NA 1958 GOD. ZAKON O GOSUDARSTVENNOM PLANE RAZVITIYA NARODNOGO KHOZYAYSTVA SSSR NA 1958 GOD (The State Plan for Development of the National Economy of the USSR in 1958. Decree on the State Plan for Development of the National Economy of the USSR in 1958) Moscow, Gospolitizdat, 1957. 46 p.

Transcript of the speech by I.I. Kuz'min presented before the 9th Session of the Supreme Soviet of the USSR held on the 19th and 20th of December, 1957. 2p.

BR-SOV/1633
Lukovtsev, Aleksey Alekseyevich
RATSIONAL'NYYE SPOSOBY USTANOVKI MASHIN

NA FUNDAMENTAKH (Efficient Method of Mounting Machines on Foundations) Moscow, Mashgiz, 1958. 58 p. (Series: Biblioteka slesarya-montazhnika, vyp. 1) 10,000 copies printed.

Describes methods of installing, aligning, and centering industrial machinery and equipment on foundations and presents other related data and reference material. 2p.

BR-SOV/1670
Levshina, Ol'ga Nikolayevna
POLUPROVODNIKI I IKH PRIMENENIYE V NAUKE I TEKHNIKE; REKOMENDATEL'NYY OBZOR LITERATURY (Semiconductors and Their Use in Science and Technology; Recommended Reading List) Moscow, Gos. biblioteka SSSR im. V. I. Lenina 1956. 13 p. (Series: Novosti tekhniki, vyp. 2) 20,000 copies printed.

Intended as a guide for workers, high-school and trade-school students, teachers, lecturers, librarians, and technical propagandists. 1p.

BR-SOV/1675
Savostin, Dmitriy Zakharovich
RABOTA MARTENOVSKIKH PECHEY S KHROMO-MAGNEZITOVYMI SVODAMI (Operation of Open-hearth Furnaces With Chrome-Magnesite Roofs) Sverdlovsk, Metallurgizdat, 1958. 264 p. 2,700 copies printed.

Treats briefly the properties of Dinas and chrome-magnesite refractory bricks, describes various constructions of chrome-magnesite roofs, and discusses special thermal and engineering features in the operation of open-hearth furnaces with basic roofs. 4p.

BR-SOV/1683
Golubtsov, Mikhail Georgiyevich
ELEKTROMEKHANICHESKIYE FIL'TRY RADIO-CHASTOT (Radio-Frequency Electromechanical Filters) Moscow, Gosenergoizdat, 1957. 47 p. (Series: Massovaya radiobiblioteka, vyp. 282) 25,000 copies printed.

Describes new types of filters used in radio engineering devices with a nearly rectangular frequency response characteristic. 2p.

BR-SOV/1684
Predtechenskiy, Georgiy Pavlovich
GAZOTURBINNYYE USTANOVKI (Gas-turbine installations) Moscow, Gosenergoizdat, 1957. 376 p. 7,000 copies printed.

Concerned with stationary steam turbines and mobile gas turbine power plants. 5p.

BR-SOV/1692
Vsekhsvyatskiy, Sergey Konstantinovich
MALYYE TELA SOLNECHNOY SISTEMY (Small Bodies in the Solar System) Moscow, Gostekhizdat, 1958. 47 p. 25,000 copies printed.

For the general reader. Describes small cosmic bodies such as comets, meteors, asteroids and cosmic dust, and gives an explanation as to their origin. 1p.

BR-SOV/1694
Linde, Dmitriy Pavlovich
OSNOVY RASCHETA LAMPOVYKH GENERATOROV SVCH (Principles of the Design of Superhigh-frequency Tube Generators) Moscow, Gosenergoizdat, 1959. 430 p. 19,000 copies printed.

Discusses problems and methods of designing super-high-frequency oscillators with external excitation and their basic elements. 5p.

BR-SOV/1703
Gol'dshteyn, Ya. Ye., L. S. Lyakhovich, L. L. Pyatakova, and G. M. Trusenev
MIKROLEGIROVANIYE STALI 45 DOBAVKOY BORA (Boron Additives for Microalloying of 45 Steel) Moscow, AN SSSR, 1956. 13 p. (Series: Informatsiya of nauchno-issledovatel'skikh rabotakh. Tema 1, no. I-56-217) 870 copies printed.

Results of an investigation of the properties of boron-containing 45R steel. 1p.

BR-SOV/1705
USSR. Ministerstvo chernoy metallurgii. Tsentral'naya nauchno-tekhnicheskaya biblioteka. Otdel bibliografii
PRIMENENIYE KISLORODA V STALEPLAVIL'NOM PROIZVODSTVE; BIBLIOGRAFICHESKIY UKAZATEL' (Use of Oxygen in the Steel Smelting Industry; a Bibliographic Guide) Moscow, Metallurgizdat, 1957. 76 p. 2,000 copies printed.

Contains all major references concerning the use of oxygen in steelmaking published in the USSR and abroad from 1956 to 1956. 2p.

BR-SOV/1708
Akademiya nauk SSSR. Matematicheskiy institut
SBORNIK STATEY PO MATEMATICHESKOY LOGIKE I YEYE PRILOZHENIYAM K NEKOTORYM VOPROSAM KIBERNETIKI (Colletion of Articles on Mathematical Logic and Its Applications to Certain Problems of Cybernetics) Moscow, Izd-vo AN SSSR, 1958. 362 p. (Series: Its: Trudy, t. 51) 3,500 copies printed.

Contains original contributions of Soviet mathematicians in mathematical logic. 4p.

BR-CHICOM/1718
Hsieh, Ch'u-fang
TIEN PO YU T'IEN HSIEN, SHANG TS'E (Wave Propagation and Antennas, Vol 1) Peking, Jen min uy tien ch'u pan she, 1958. 259 p. 3,600 copies printed.

The first part deals with the principle of the electromagnetic field, including vector analysis, the basic principle of the electrostatic field, static and alternating magentic fields, and also principles of reflection, refraction and radiation of electromagnetic waves. In the second part the author discusses the propagation of electromagnetic waves. 5p.

BR-SOV/1722
NADEZHNOST' RADIOELEKTRONNOY APPARATURY; SBORNIK STATEY (Reliability of Electronic Equipment; Collection of Articles) Moscow, Izd-vo "Sovetskoye radio," 1958. 144 p. Number of copies printed not given.

Describes methods of calculating the probability of faults in trigger circuits, amplifiers, rectifiers, and other vacuum-tube devices. 2p.

BR-SOV/1725
Rubinov, Aleksandr Davidovich
ORGANIZATSIYA I PROVEDENIYE LABORATORNYKH RABOT PO PREDMETU "DOPUSKI, POSADKI I TEKHNICHESKIYE IZMERENIYA" (Organizing and Conducting Laboratory Work on the Subject "Tolerance, Fit and Technical Measurements") Moscow, Mashgiz, 1958. 149 p. 25,000 copies printed.

Describes ten laboratory experiments designed to acquaint students with the most common industrial measuring instruments and gages. 2p.

BR-SOV/1727
Akademiya nauk SSSR. Institut geokhimii i analiticheskoy khimii
REDKOZEMEL'NYYE ELEMENTY; POLUCHENIYE, ANALIZ, PRIMENENIYE (Rare Earth Elements; Extraction, Analysis and Application) Moscow, Izd-vo AN SSSR, 1958. 331 p. 2,200 copies printed.

Articles treat chemical methods of separating rare earth mixtures, methods of processing rare earth ores, ion exchange chromatography, chemical analysis, and some industrial applications of rare earths. 6p.

BR-SOV/1729
Bakhvalov, Grigoriy Tikhonovich, and Nikolay Vasil'yevich Rumyantsev
ELEKTROLITICHESKOYE POKRYTIYE METALLA PRI REVERSIVNOM TOKE; STENOGRAMMA LEKTSII (Electrolytic Plating of Metals Using Reverse Current; Transcript of a Lecture) Moscow, Moskovskiy dom nauchno-tekhnicheskoy propagnady imeni F. E. Dzherzhinskogo, 1957. 45 p. 5,000 copies printed.

Explains the theory of the method of reverse current in electroplating; describes the advantages of this method, and the successful results obtained in experimental applications and in practice in Soviet industrial plants. 2p.

BR-SOV/1740
Bal'ya , Sarkis Vaganovich
TEKHNICHESKAYA TERMODINAMIKA I TEPLOVYYE DVIGATELI (Engineering Thermodynamics and Heat Engines) Moscow, Mashgiz, 1958. 454 p. 20,000 copies printed.

Covers the material of the course entitled "Engineering Thermodynamics and Heat Engines" special field of "Heat-Gas-Supply and Ventilation." 10p.

BR-SOV/1767
Babikov, Oleg Ivanovich
PUTI ISPOL'ZOVANIYA UL'TRAZVUKA (Ways of Using Ultrasonic Waves) Moscow, Izd-vo AN SSSR, 1958. 47 p. (Series: Energeticheskaya promyshlennost') 1,500 copies printed.

Presents a classification of ultrasonic equipment used in industry and describes methods and equipment used for detection of flaws, machining of hard and brittle materials, ultrasonic leaning, and soldering of aluminum. 2p.

BR-SOV/1771
Fominykh, I. P., Yu. Yu. Zelikman, and V. Knyazev
NOVOYEV V LITEYNOM PROIZVODSTVE; IZ OPYTA LITEYNYKH TSEHKOV PREDPRIYATIY TULY I OBLASTI (New Developments in Founding; Foundry practices in Tula and Tula Province) [Tula] Tul'skoye knizhnoye izd-vo, 1956. 78 p. 3,000 copies printed.

Articles dealing with a method of steel casting which produces easily removed dead heads, chill casting of mining machine parts, chill casting of bronze, and the utilization or resins for mold mixtures. 1p.

BR-SOV/1776
Meyklyar, M. V.
PAROVYYE KOTLY S YESTESTVENNOY TSIRKULYATSIYEY (Steam Boilers With Natural Circulation) 2nd ed., rev. Moscow, Gosenergoizdat, 1958. 287 p. 11,900 copies printed.

The book, a revised second edition, presents basic data on the operation of large-capacity steam boilers and auxiliary equipment. 4p.

BR-SOV/1784
Levinson, Nikolay Grigor'yevich
MEKHANIZATSIYA UPRAVLENCHESKOGO TRUDA /ORGATEKHNIKA/ (Mechanization of the Management Jobs /Organization Techniques/) Vol 1. Moscow, Mashgiz, 1958. 386 p. 4,000 copies printed.

Describes basic trends in the mechanization of industrial control operations. 2p.

BR-SOV/1788
OGNEUPORY DLYA CHERNOY METALLURGII; SBORNIK STATEY (Refractories in Ferrous Metallurgy; Collection of Articles) Moscow, Metallurgizdat, 1958. Errata slip inserted. 4,000 copies printed.

Consists of 20 articles on the development and use of refractories in the Soviet metallurgical industry. 3p.

BR-SOV/1790
Ragulin, Vasiliy Vasil'yevich
PROIZVODSTVO PNEVMATICHESKIKH SHIN (Manufacture of Pneumatic Tires) Moscow, Goskhimizdat, 1958. 355 p. Errata slip inserted. 4,000 copies printed.

Contains basic information on the manufacture of tires (automobile, agricultural machinery, mobile construction equipment, motorcycle, and bicycle). 6p.

BR-CHICOM/1800
Academia Sinica
COLLECTED SCIENTIFIC PAPERS; METEOROLOGY, 1919-1959. Peking, 1954. 624 p.

This collection of articles in the field of meteorology is the first in a series of such works in the physical sciences planned by the Academia Sinica. 4p.

BR-SOV/1805
Kul'batskiy, Aleksey Pavlovich
SKOROSTNYYE REMONTY ELEKTROSTALEPLAVIL'NYKH PECHEY (Rapid Repair of Electric Steel-melting Furnaces) Sverdlovsk, Metallurgizdat, 1958. 76 p. Errata slip inserted. 2,500 copies printed.

Contains general information about the design, construction and operation of electric furnaces, and some specific instructions for conducting overhaul operations. 2p.

BR-SOV/1808
Kotov, Or Kirillovich
POVERKHNOSTNOYE UPROCHENIYE DETALEY MASHIN KHIMIKO-TERMICHESKIMI METODAMI (Chemical Heat Treatment Methods for Surface Hardening of Machine Elements) Moscow, Mashgiz, 1958. 166 p. Errata slip inserted. 4,000 copies printed.

Contains descriptions of experiments and evaluations of results with carburization, cyaniding (gas carbonitriding), and chromizing of steels and steel alloys by the diffusion process. 3p.

BR-SOV/1809
Shindel'man, Rudol'f Isaakovich
MEKHANICHESKIYE VYPRYAMITELI BOL'SHOY MOSHCHNOSTI (High-power Mechanical Rectifiers) Moscow, Metallurgizdat, 1958. 156 p. Errata slip inserted. 3,500 copies printed.

Covers the problem of the utilization of mechanical high-power rectifiers in electrometallurgical and electrochemical industrial plants for electrolytic processes. 2p.

BR-SOV/1810
Yakobson, Mikhail Osipovich
SOVREMENNYYE METODY OBRABOTKI TSILINDRICHESKIKH ZUBCHATYKH KOLES (Modern Methods of Machining Spur Gears) Moscow, Trudrezervizdat, 1958. 91 p. 10,000 copies printed. (Series: Novaya tekhnika i peredovyye metody truda).

Describes modern equipment used in the Soviet Union and abroad for manufacturing spur gears. 1p.

BR-SOV/1812
Gazarov, Artem Tigranovich
SHARNIRNO-RYCHAZHNYYE MEKHANIZMY KUZNECHNO-PRESSOVYKH MASHIN (Link Mechanisms of Forging Presses and Machines) Moscow, Mashgiz, 1958. 107 p. Errata slip inserted. 4,000 copies printed.

Presents analytical methods for the synthesis of toggle mechanisms of press forming machines. 3p.

BR-SOV/1813
Akademiya nauk Ukr SSR, Kiyev. Institut stroitel'noy mekhaniki
ISSLEDOVANIYA V OBLASTI METALLOVEDENIYA I KONTAKTNOY PROCHNOSTI METALLOV; SBORNIK DOKLADOV (Investigations in the Field of Physical Metallurgy and Contact Strength of Metals; Collection of Reports) Kiyev, Mashgiz, 1958. 127 p. 4,000 copies printed.

Consists of ten papers presented at a seminar to examine the results of research in the field of friction and wear of machines. 3p.

BR-SOV/1815
Huang, K'un and Hsieh, Hsi-te
PAN TAO T'I WU LI HSUEH (Semiconductor Physics) Peking, K'o hsüeh Ch'u pan she, 1958. 400 p. 3,300 copies printed.

An introduction to the basic physical theory of semiconductors is given, as well as a description of the properties of semiconductors and the theory of electron mobilities. 4p.

BR-SOV/1816
D'yachenko, Petr Yefimovich
PRIMENENIYE RADIOAKTIVNYKH IZOTOPOV V TEKHNIKE (Use of Radioactive Isotopes in

Engineering) Moscow, Mashgiz, 1958. 214 p. 10,000 copies printed.

Discusses various uses of radioactive isotopes in engineering laboratory research and in industrial plant processes. Much attention is paid to the problem of the wear of machine parts and the mechanism of wear as studied by means of radioactive isotopes. 2p.

BR-SOV/1818
Gurevich, Avigdor Berkovich (Viktor Borisovich), and Vasiliy Pavlovich Minorskiy
UCHEBNIK ANALITICHESKOY GEOMETRII DLYA VTUZOV (Textbook of Analytical Geometry for Vtuzes) Moscow, Fizmatgiz, 1958. 163 p. 35,000 copies printed.

A brief, but complete and accurate, presentation of the methods of plane and solid analytic geometry. 6p.

BR-SOV/1821
Kitov, Anatoliy Ivanovich
ELEKTRONNYYE VYCHISLITEL'NYYE MASHINY (Electronic Computers) Moscow, Izd-vo "Znaniye," 1958. 30 p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znanii. Seriya VIII, 1958; vyp. II, Nr. 23) 42,000 copies printed.

A general discussion of electronic analog and digital computers; also describes the use of computers in management and for automatic control of industrial processes. 1p.

BR-SOV/1823
Shul'gin, Konstantin Aleksandrovich
EKVIVALENTNYYE SKHEMY I SISTEMY PARAMETROV POLUPROVODNIKOVYKH TRIODOV (Equivalent Circuits and Parameter Systems of Transistors) Moscow, Gosenergoizdat, 1958. 87 p. (Series: Massovaya radiobiblioteka, vyp. 309) 50,000 copies printed.

Discusses basic parameters and equivalent circuits of junction transistors and describes methods of measuring parameters and determining equivalent circuit elements. 2p.

BR-SOV/1825
Grodzenskiy, David Emmanuilovich
RADIOBIOLOGIYA; BIOLOGICHESKOY DEYSTVIYE IONIZIRUYUSHCHEGO IZLUCHENIYA (Radiobiology; Biological Reaction of Ionizing Radiation) Moscow, Izd-vo "Znaniye," 1958. 31 p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya VIII, 1958; vyp. 1, no. 17) 35,000 copies printed.

A popular survey of radiobiology. The main interest is in ionizing radiation, its use in biology, and the effect of the radiation on organisms. A review of the basic concepts of radiation is given at the beginning of the book. 2p.

BR-SOV/1827
Vsespyuznyy nauchno-issledovatel'skiy geologo-razvedochnyy neftyanoy institut
GEOLOGIYA I NEFTE-GAZONOSNOST' YUGO-VOSTOCHNYKH RAYONOV RUSSKOY PLATFORMY; SBORNIK STATEY (Geology and Oil and Gas Bearing Characteristics of the Southeastern Regions of the Russian Platform; Collection of Articles) Leningrad, Gostoptekhizdat, 1958. 242 p. Errata slip inserted. 1,200 copies printed.

These articles, originally read at a meeting of the Scientific and Technical Council of Ministry of the Petroleum Industry (1953), discuss the geologic structure of the southeastern parts of the Russian platform, the planning of exploratory and prospecting work, and special problems in geochemistry. 3p.

BR-SOV/1828
Samoylenko, Vitaliy Ivanovich
OSOBENNOSTI RABOTY POLUPROVODNIKOVYKH DIODOV I TRIODOV PRI BOL'SHIKH NAPRYAZHENIYAKH (Characteristics of the Performance of Crystal Diodes and Transistors at High Voltages) Moscow, Oborongiz, 1959. 53 p. (Series: Moscow. Aviatsionyy institut imeni. Sergo Ordzhonikidze. Trudy, vyp. 103) 18,150 copies printed.

The author investigates the effect of transistor operating conditions on collector function capacitance. He also discusses practical circuits using collector capacitance for frequency modulation, phase modulation, amplitude modulation, parametric amplification, automatic frequency control, and delay line control. 2p.

BR-SOV/1830
Malkin, Khaim Ruvimovich
TEPLOVOY I ELEKTRICHESKIY RASCHET KOAKSIAL'NYKH VYSOKOCHASTOTNYKH KABELEY (Thermal and Electric Rating of Coaxial High-frequency Cables) Moscow, Gosenergoizdat, 1958. 96 p. 5,550 copies printed.

Discusses the thermal rating of high-frequency coaxial cables with matched and nonmatched loads and the computation of current parameters for individual designs of such cables. 2p.

BR-SOV/1846
Finkel'shteyn, D. N., and V. A. Boretskaya
METODY ANALIZA MINERAL'NOGO SYR'YA; IZ OPYTA RABOTY TSENTRAL'NOY LABORATORII URAL'SKOGO GEOLOGICHESKOGO UPRAVLENIYA (Methods of Mineral Analysis; From Experiences of the Ural Geological Administration) Moscow, Gosgeoltekhizdat, 1958. 183 p. Errata slip inserted. 5,000 copies printed.

The book reviews gravimetic, volumetric, optical, and polarographic methods of mineral analysis. 3p.

BR-SOV/1851
Veynberg, V. B.
OPTIKA V USTANOVKAKH DLYA ISPOL'ZOVANIYA SOLNECHNOY ENERGII (Optics in Installations for Utilization of Solar Energy) Moscow, Oborongiz, 1959. 235 p. Errata slip inserted. 2,050 copies printed.

Data on solar energy potential within the Soviet Union are given, and the regional weather distribution within the country is described. 4p.

BR-SOV/1852
Kravchenko, Ivan Varfolomeyevich
LETCHIKU O METEOROLOGII (Meteorology for Pilots) 2nd ed., rev. and enl. Moscow, Voyenizdat, 1958. 255 p. Number of copies printed not given.

A detailed description of the methods used in studying the atmosphere, its structure and composition, as well as the most important individual meteorological factors and their distribution over the USSR. 3p.

BR-SOV/1853
Tumerman, Lev Abramovich
NOVYYE ISTOCHNIKI SVETA (New Sources of Light) Moscow, Izd-vo "Znaniye," 1958. 31 p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya VIII, 1958; vyp. II, no. 25) 35,000 copies printed.

This popular science type booklet describes the various sources of light and concludes with a discussion of the possibilities of using "cold light" sources. 1p.

BR-SOV/1866
Grigor'yev, Nikolay Leonidovich
GIDRAVLIKA (Hydraulics) Moscow, Izd-vo "Morskoy transport", 1958. 319 p. Errata slip inserted. 3,000 copies printed.

This textbook is intended for students of nautical schools and deals with specific problems of sea-bottom dredging. 6p.

BR-SOV/1867
Tareyev, Boris Mikhaylovich, and David Mikhaylovich Kazarnovskiy
ISPYTANIYA ELEKTROIZOLYATSIONNYKH MATERIALOV (Testing Electric Insulating Materials) Moscow, Gosenergoizdat, 1958. 208 p. 20,950 copies printed.

Special attention is devoted to new methods of continuous testing with automatic measuring instruments. 3p.

BR-SOV/1868
Nauchno-tekhnicheskoye obshchestvo neftyanoy promyshlennosti
PUTI RAZVITIYA GAZOVOY PROMYSHLENNOSTI SSSR; MATERIALY VSESOYUZNOGO SOVESHCHANIYA (Trends in the Development of the Gas Industry in the USSR; Materials Presented at the All-Union Conference) Moscow, Gostoptekhizdat, 1958. 432 p. 3,000 copies printed.

Discusses the production and gathering of natural gas, the extraction of gas from coal and shale, the construction and operation of trunk gas pipelines, gas supply to cities, and the processing of gas. 6p.

BR-SOV/1883
Kalinin, G. P. and P. I. Milyukov
PRIBLIZHENNYY RASCHET NEUSTANOVIVSHEGOSYA DVIZHENIYA VODNYKH MASS (Approximate Calculation of the Non-Stabilized Motion of Water Masses) Leningrad, Gimiz, 1958. 70 p. (Series: Leningrad. Tsentral'nyy institut prognozov. Trudy, vyp. 66) 1,000 copies printed.

Discusses a new approximative method of analyzing non-stabilized motion in water in open river beds. 2p.

BR-SOV/1896
Akademiya nauk SSSR. Institut metallurgii
METALLURGIYA, METALLOVEDENIYE, FIZIKO-KHIMICHESKIYE METODY ISSLEDOVANIYA (Metallurgy, Study of Metals, and Physicochemical Methods of Investigation) Moscow, Izd-vo AN SSSR, 308 p. (Series: Its: Trudy, vyp. 3) Errata slip inserted. 3,000 copies printed.

This book is of interest to researchers in metallurgy, as well as to the technical personnel of the metallurgical industry. 3p.

BR-SOV/1906
Finkel'shteyn, David Naumovich
ISKUSSTVENNYYE MINERALY (Synthetic Minerals) Moscow, Izd-vo "Znaniye", 1959, 31 p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya IV, 1959; Nr 3) 42,500 copies printed.

A popular description of various synthetic minerals, such as diamonds, rubies, sapphires, graphite, quartz, etc. 1p.

BR-SOV/1912
UCHEBNYY SINOPTICHESKIY ATLAS (School Synoptical Atlas of Weather Maps) Pt. 1. Leningrad, Gidrometeor. Izd-vo, 1956. 48 fold. maps (in portfolio) 8,000 copies printed.

Consists of 96 weather maps (48 sheets) on an identical base, giving detailed meteorological and aerological information for certain months of 1952-1955. 2p.

BR-SOV/1914
Vsesoyuznyy gidrologicheskiy s"yezd. 3d, Leningrad, 1957.
TRUDY ... T. I: OBSHCHIYE SVEDENIYA, RESHENIYA I PLENARNYYE DOKLADY. (Transactions of the 3d All-Union Hydrological Convention. Vol. 1: General Information, Resolutions, and Plenary Reports) Leningrad, Gidrometeoizdat, 1958. 242 p. Errata slip inserted. 2,000 copies printed.

Reports on the preparation for and the actual proceedings at the convention, the decisions taken in plenary and departmental meetings, the minutes of the plenary meetings and plenary reports. 3p.

BR-SOV/1915
Kitov, Anatoliy Ivanovich, and Nikolay Andreyevich Krinitskiy
ELEKTRONNYYE VYCHISLITEL'NYYE NASHINY (Electronic Computers) Moscow, Izd-vo AN SSSR, 1958. 130 p. (Series: Akademiya nauk SSSR. Nauchnopopulyarnaya seriya) Errata slip inserted. 25,000 copies printed.

Introduces nonspecialized readers to the field of electronic computers. 2p.

BR-SOV/1916
Vsesoyuznoye soveshchaniye po khimii bora, 1955
BOR; TRUDY KONFERENTSII PO KHIMII BORA I YEGO SOYEDINENIY (Boron; Transactions of the Conference on the Chemistry of Boron and Its Compounds) Moscow, Goskhimizdat, 1958. 189 p. Errata slip inserted. 2,400 copies printed.

Studies on the chemistry, crystalline structure, physicochemical properties, and technology of boron and its compounds. 3p.

BR-SOV/1926
Akademiya nuak SSSR. Kompleksnaya antarkticheskaya ekspeditsiya.
GIDROLOGICHESKIYE, GIDROKHIMICHESKIYE, GEOLOGICHESKIYE I BIOLOGICHESKIYE ISSLEDOVANIYA; DIZEL'-ELEKTROKHOD "OB'," 1955-1956 gg. (Hydrological, Hydrochemical, Geological, and Biological Studies; Research Ship "Ob'," 1955-1956) Leningrad, Gidrometeoizdat, 1958. 296 p. (Series: Its: Trudy) Errata slip inserted. 3,000 copies printed.

Each section of the book contains a brief explanation of the organization and methods of observation used, as well as of the methods applied in the processing of data obtained. 3p.

BR-SOV/1932
Moscow. Aviatsionnyy tekhnologicheskiy institut
ISSLEDOVANIYA V OBLASTI TEKHNOLOGII AVIADVIGATELEY; [SBORNIK] (Studies in the Field of Technology of Aircraft Engines; Collection of Articles) Moscow, Oborongiz, 1959. 100 p. (Series: Its: Trudy, vyp. 36) 2,100 copies printed.

Presents results of the research work done by the Department of Aircraft Engine Technology of Moscow Aviation Technological Institute. 3p.

BR-SOV/1949
Rumyantsev, Sergey Vasil'yevich
ISSLEDOVANIYE EKONOMICHNOSTI POLETA I SKOROPOD"YEMNOSTI SAMOLETOV S TURBOREAKTIVNYMI DVIGATELYAMI (Investigation of the Economy of Flight and Climbing Speed of Turbojet Airplanes) Moscow, Oborongiz, 1958. 91 p. (Series: Moscow. Aviatsionnyy institut imeni Sergo Ordzhonikidze. Trudy, vyp. 101) Errata slip inserted. 3,650 copies printed.

Presents methods for calculating the most efficient flight conditions for aircraft with turbojet engines, particularly transport and other heavy aircraft. 3p.

BR-SOV/1955
Astapovich, Igor' Stanislavovich
METEORNYYPE YAVLENIYA V ATMOSFERE ZEMLI (Meteor Phenomena in the Earth's Atmosphere) Moscow, Fizmatgiz, 1958. 640 p. 2,000 copies printed.

A basic source book on meteor phenomena for both academic and technical personnel. 14p.

BR-SOV/1971
Suntsov, Nikolay Nikolayevich
METODY ANALOGIY V AEROGIDRODINAMIKE (Analogy Methods in Aero- and Hydrodynamics) Moscow, Gizmatgiz, 1958. 324 p. 4,000 copies printed.

Treats virtually all of the analogy methods used in aero- and hydrodynamics, including the electrohydrodynamic, magnetohydrodynamic, gashydraulic, and mechanical analogies. 3p.

BR-SOV/2024
Ushakov, Gavriil Alekseyevich, and Iosif Davidovich Gol'din
NAGLYADNYYE MARKSHEYDERSKIYE GRAFIKI (Mine Surveyors' Illustrative Graphics) Kharkov, Metallurgizdat, 1959. 187 p. Errata slip inserted. 2,800 copies printed.

Comprehensive coverage of the basic principles of constructing illustrative graphics used in the mining industry. 3p.

BR-SOV/2025
Krivoglaz, Mikhail Aleksandrovich, and Adrian Anatol'yevich Smirnov
TEORIYA UPORYADOCHIVAYUSHCHIKHSYA SPLAVOV (Theory of Ordering in Alloys) Moscow, Fizmatgiz, 1958. 388 p. 5,000 copies printed.

Systematic presentation of the more extensively investigated aspects of the theory of ordering in alloys. 3p.

BR-SOV/2067

Moscow. Institut inzhenerov geodezii, aerofotos "yemki i kartografii

TRUDY, VYP. 28 (Transactions of the Moscow Institute of Geodetic, Aerial Survey and Cartographic Engineers, Nr. 28) Moscow, Geodezizdat, 1957. 110 p. 1, 400 copies printed.

Articles on geodetic surveying, photogrammetry, and cartography. 2p.

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Promyshlenno-Ekonomicheskaya Gazeta (USSR) 1959, 9 May, p. 4.

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Russian mono. Svremennaya Voyennaya Tekhnika, 1956, p. 1-97, 108-133, 145-149, 158-211, 222-246, 263-273.

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Skrzydlata Polska (Poland) 1959 [v. 15] no. 18, p. 8-9.

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Czechoslovakian mono. Silikony (Organokremicite Slouceniny, Jejich Priprava, Vlastnosti a Pouziti) 1954.

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Izvestiya Vysshikh Uchebnykh Zavedeniy. Khimiya i [Khimicheskaya] tekh[nologiya] (USSR 1958, no. 4, p. 122-127.

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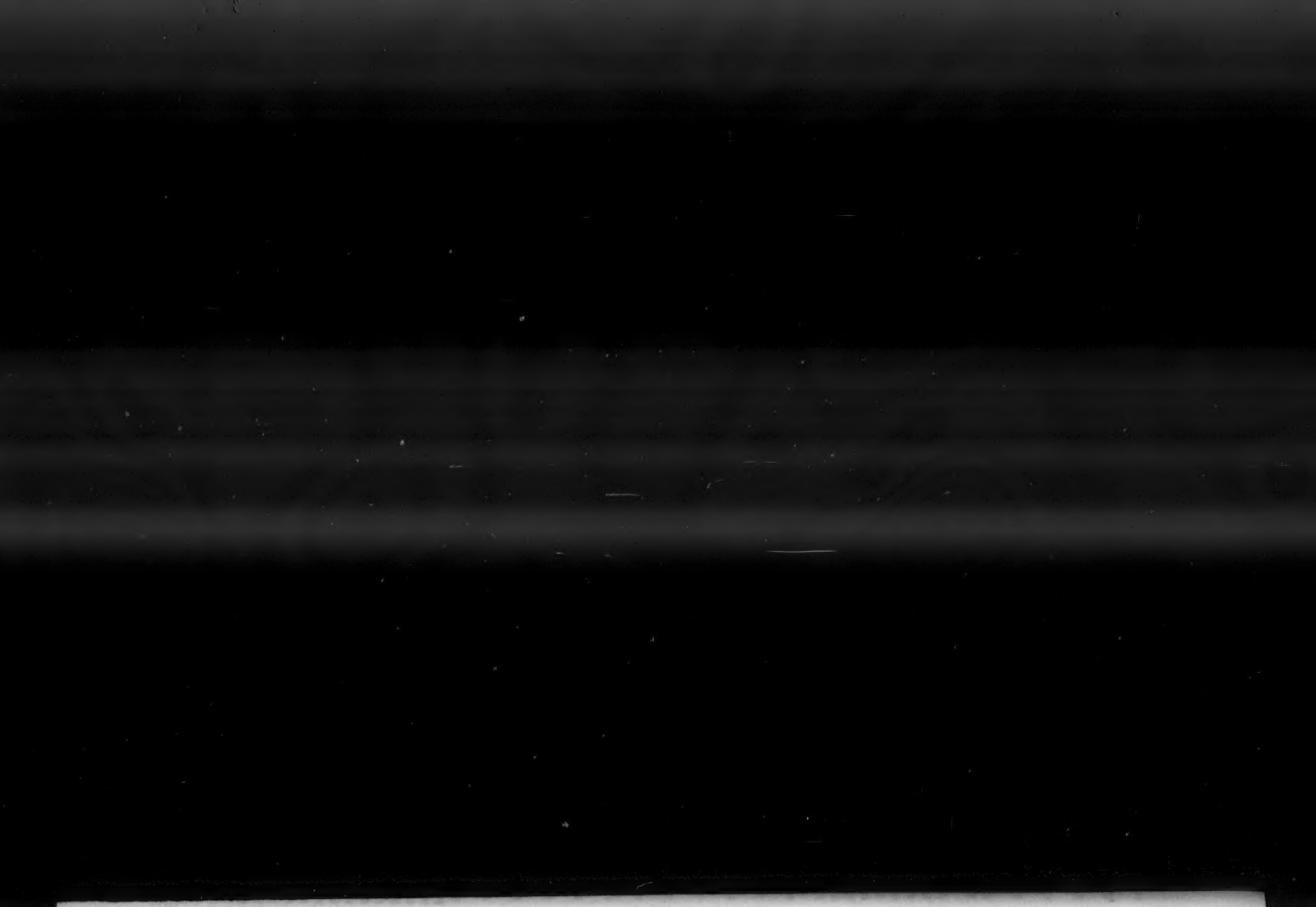
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